University News

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## Assessing the Quality of Academic Staff Colleges in India

## Bioinformatics: A Recent Development in Information Science

## Performance in the University Examination and Associated Factors: A Study of First Year Health Science Students

## Convergence of Technologies

–Convocation Address

**Refresher Course in Punjabi**
**SAARC Law Centre at NALSAR**
**Avinashilingam Institute Convocation**

Association of Indian Universities

# AMRAVATI UNIVERSITY
## EMPLOYMENT NOTICE
### (SPECIAL RECRUITMENT DRIVE - 3rd Time)

No.AU/Est 1/103/A-2558/2003 Date : 17th November, 2003

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**Last date for submission of Application forms duly filled in 10th Dec., 2003.**

### PARTICULARS OF ADVERTISEMENTS

| Advt.No. | Subject | No. of posts | Reservation |
|---|---|---|---|
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**Reader (Advt.No.R-5,6 & 7/2003) :**

Good academic record with a Doctoral Degree or equivalent published work. In addition to these, candidates who join from outside the University system, shall also possess atleast 55% of the marks or an equivalent grade of B in the 7 point scale with latter grades O, A, B, C, D, E & F at the master's degree level. ***AND***

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**Reader (Advt.No.R-8/2003) :**

Ph.D Degree with First Class Degree at Bachelor's or Master's level in the appropriate branch of Engineering/Technology. **AND** 3 years experience in Teaching / Industry / Research at the level of Lecturer or equivalent.

(**Note** : Candidates from Industry/Profession with First Class Bachelor's Degree in the appropriate branch of Engineering/Technology or First Class Master's Degree in the appropriate branch of Engineering / Technology and Professional work which is significant and can be recognised as equivalent to Ph.D. degree and with 5 years experience would also be eligible.

**Reader (Advt.No.R-9/2003) :**

Ph.D. degree or a fellowship of IIMs, ICA or ICWA with first class Master's degree in Business Management/Administration/Other relevant Management's related discipline.

3 years experience in Teaching/Industry/Research/Profession. For the candidates from Industry/Profession, First class Master's degree in Business Management/Administration/Other relevant management related discipline AND Professional work which is significant and can be recognized at national/international level as equivalent to Ph.D. degree and with 5 years experience in Industry/Profession, would also be eligible.

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(1) Reservation for ex-serviceman will be observed as prescribed by the State Government.
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Prescribed application forms with details of qualifications,experience & other conditions etc. can be had on payment of Rs. 200/- (Non- refundable) by cash / Demand Draft in favour of President, Amravati University Employees Credit Co-operative Society, Amravati alongwith self-addressed envelope (12" x 5") from the counter of Amravati University Employees Credit Co-operative Society, near Main Administrative Building at the University Campus, Amravati during office hours. **The application forms duly filled in should reach the undersigned on or before 10.12.2003** alongwith a self addressed envelope (9" x 4"). Postal delay shall not be entertained.

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# Assessing the Quality of Academic Staff Colleges in India

**K S Chalam**
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Higher Education in the 21st Century has become an economic good rather than a merit want. The withdrawal of the state from its traditional function of providing free education to people has adversely affected the education system in general and higher education in particular. The situation has helped the emergence of a strong private sector in the provision of higher education. The World Trade Organisation, particularly the adoption of General Agreement in Trade in Services, promoted the trade in educational services at a global level. It is commented by scholars that higher education in the less developed countries like India, is affected by this new phenomenon. Several international agencies from the advanced countries like USA, UK and Australia, etc., have established their off-shore campuses in India and are offering courses. The rich and the talented have been attracted by these institutions. Therefore, the attention of the educational commentators is focused now on these institutions as they are concerned about the quality of these courses. Because, some of these institutions are not accredited in their home countries, some may be spurious and still some are dubious. It is in this context, the assessment of the quality of higher education is necessitated. The University Grants Commission has established the National Assessment and Accreditation Council (NAAC), as an autonomous body (a) to be a catalyzing agent to motivate institutions of higher learning to achieve excellence in all spheres of academic activity and to impart quality education which equips students to face the challenges of modern life, and (b) to promote the idea of accountability among the academia. It came into effect from September 1994. The NAAC remarked that, "assessment means performance evaluation of an institution or programmes".

## Studies on Performance

Several studies have been undertaken by scholars and government agencies to assess the performance of higher educational institutions. The rate-of-return studies, studies on productivity of education and the estimation of performanee indicators of universities are the major themes on which scholars have produced voluminous literature. However, these studies relate to the aggregate system of education and its performance without any specific reference to quality component. The quality is indirectly related, but not with any concentration on the type of institutions where the education is offered. The unit of analysis in such studies is not necessarily an institution like university, college or department. Therefore, educationists and policy makers have devised separate tools of analysis to assess quality of individual institutions. Further, governments and the public have become so quality conscious when education became a commodity and all kinds of institutions are offering the commodity in the market. To instill confidence in public, accredited organisations have been established to assess and accredit such quality institutions and they are supposed to be recognized by the government on the basis of some criterion. Today, almost all countries where private sector operates have established credible accreditation organisations to ensure quality of education both to the parents and to the government. These organisations have developed several techniques to assess the quality of education. The Quality Assurance Agency for Higher Education, UK has developed benchmark statements and adopted a six point criteria similar to that of NAAC. In fact, QAA had a forerunner in Jarrat Report's recommendations on performance indicators. The indicators of Jarrat report related to internal performance, external performance and operational performance. The UFC has been using these indicators for allocation of funds, etc. In the Western Europe, three instruments: the institutional appraisal, performance indicators and peer review are being used to ensure not only quality but also accountability. Thus assessment of quality or performance of higher education has already come of age.

## The NAAC Criteria of Quality

In India, the NAAC has developed scientific procedures, methods and tools to undertake the exercise of assessment of institutions. The process of assessment involves preparation of self-study report by the institution, validation of the self study report by a team of peers on the basis of on site visit and final decision of accreditation to be made by the NAAC committee. So far around 350 institutions have been accredited. Though some universities have shown reluctance in the beginning, they are all now following the line to get accredited by NAAC. The NAAC has been using a set of criteria with the following seven items to assess the institutions.

(i) Curricular aspects, that includes initiation and design of courses, feedback, etc.

(ii) Teaching, learning and evaluation, that includes educational technology, pedagogy, recruitment of faculty, etc.

(iii) Research, consultancy and extension, that includes research output, freedom to publish, academic-service interface, etc.

(iv) Infrastructure and learning resources,that includes physical facilities, lab, library, auxiliary services, etc.

(v) Student support and progression that includes financial aid to students, student destination, counseling, etc.

(vi) Organisation and Management, that includes the administrative mechanism, its automation, budgeting, resources mobilization, etc, and

(vii) Healthy practices in an open ended item that may include anything that promotes academic ambience.

The above seven points are assigned with different weights depending upon the unit of accreditation. The universities are given one kind of weightage system and the affiliated and autonomous colleges are weighted differently ultimately to arrive at a single weighted average, to assign grades such as stars or points, etc. This method is followed to avoid any problems in the inter-institutional comparison of scores.

It is clear from the above criteria and the sub units of each criterion that the assessment has not taken the teaching-learning process, particularly the functions of the teachers very seriously. It is quite right and justified in the overall assessment of the institution. But, when the quality of teaching which is crucial for the overall quality of higher education is assessed, the present criteria appear to be inadequate. Further, the criteria cannot be applied to assess an individual unit like the Academic Staff College which is established specifically to improve quality of teaching in India.

## Objectives of Academic Staff Colleges

Though Academic Staff Colleges are established as a part of the university system, they are in fact independent institutions of the UGC. Except for administrative supervision, the ASCs are totally financed and controlled by the UGC. The ASCs have emerged as units of UGC over a period of time and they are now rightly called as UGC-Academic Staff Colleges with diversified and enhanced responsibilities. Three kinds of courses are organized by ASCs: Orientation for newly appointed, Refresher Courses for Senior Teachers and short term training courses for administrators.

The objectives of ASCs are to enable the newly appointed lecturer to :

(a) understand the significance of education in general and higher education in particular in the global context,

(b) acquire and improve basic skills of teaching and learning with innovative and advanced methods, and

(c) utilize the time to improve the personality of the teacher.

In addition to the above, the senior teachers are offered refresher courses in the subject of their teaching. Here, the major objective is to provide latest and up to date knowledge in the discipline and to familiarize the teacher with the operation of the advanced equipment. Educational administrators like the Principal, Registrar, Accounts Officer and Heads of Departments, etc., are also provided opportunities of short term training course through Academic Staff Colleges to improve the quality of management. The whole scheme is revamped on the above lines during the 10th Plan period that came into effect from April 2002.

## Evaluation of the Work of Staff Colleges

The Academic Staff College scheme of the UGC brought a serious debate in the country when it was introduced in 1987. Later, it was accepted by the teaching community as a necessary process to be undertaken by every teacher in the system of higher education. The Pay Commissions of UGC have linked the career advancement of teachers with the attendance at the Academic Staff Colleges as one of the important criterion. This has attracted scholars to study the effectiveness of the scheme. Apart from Ph.D. dissertations in the departments of education, independent scholars who are intimately connected with the scheme have undertaken studies to assess the quality of the programmes. K S Chalam in his study on 'Performance of Academic Staff Colleges in India' used the feedback data supplied by the 44 staff colleges in the country and concluded that the impact of the scheme on the quality of education is positive. Sethumadhava Rao, P H in his study on Training for Higher Education', developed a separate tool to collect data from all the 44 colleges and concluded that the independently obtained participants feedback rated contents, faculty, organisation facilities etc., are unsatisfactory compared to the positive feedback given directly to ASCs. The study of PHS Rao was undertaken at the end of the 5th year of the scheme. As he was in charge of the scheme in UGC, he has implemented some of the recommendations that arose out of his study. This has strengthened the scheme. The study of M L Sisodia in 'Educating the Educators: Vitalizing from Experience', collected data from faculty, heads of departments, principals, etc., who have participated in ASC programmes. After a careful review of the literature on staff development and with the help of the statistical data, Sisodia concluded that, "there is optimism in the academic community about positive changes that these programmes are bringing towards better teaching-learning environment in the institutions of higher education". However, he has suggested that follow up programmes are to be undertaken by the universities even after the teachers attend the ASC's to strengthen the quality of teaching in India. These evaluation studies relate to the Eighth and Ninth Plan period. They provide us with a mixed feedback about the success of the scheme. As the scheme is one of the largest staff development programmes in the world with a structured content and mandate, its success in realizing the objectives depends upon the quality control mechanisms that include the assessment of the colleges by an external agency like NAAC. The UGC has so far constituted committees under the plan grant scheme to assess the performance of the colleges and used only ad hoc criteria. It is time that a systematic and scientific criteria is to be evolved to ensure quality and assure the system that the Academic Staff Colleges will improve the quality of teaching and learning in higher education in the country.

## The Criteria to Assess Quality of Staff Development

The departments of higher education in the advanced countries are now aiming at the excellence in teaching and scholarship. The bearing report and the recent white paper of the Department of Education and Skills of the Government of UK clearly indicate this change. The UGC is supposed to maintain standards in higher education in India and in accordance with the mandate perhaps it has established Academic Staff Colleges to improve quality of teaching in the country. There is a tendency among some officers of UGC to implement some of their programmes through the colleges without realizing the limited mandate of ASCs. The colleges have developed their own ethos and work culture that need to be kept in mind in the assessment of quality. They have emerged like Inter University Centres with a broad framework of self- assessment. But, there seems to be very little impact on the quality of the ASCs through this self-assessment. It is time now to devise criteria to assess and assure good quality in staff development. We suggest the following criteria to assess the quality of Academic Staff Development in India.

(i) ***The content of the course offered*** (It deals with the designing of the course). The exercise involved in devising the content, compatibility of the content with the objectives of the course, the level of the standard, the time devoted (hours of work) in designing the course content and the people involved in the exercise and others.

(ii) ***Academic background of Resource Persons*** (It deals with the competency and the efficiency with which the faculty transact the content with participants) Educational qualifications, experience and expertise in the subject, national and international recognition, publications, facility in using advanced methods of teaching, research output, punctuality, communication abilities, interaction with participants, etc.

(iii) ***Relevance of Course Content to UG/PG Syllabus*** (This is related to the content of the course to the UG and PG syllabai). The relationship of the topics to the core content of UG/PG syllabus, consulting the university syllabus of the concerned discipline, whether latest additions in the syllabus are considered as content, and others.

(iv) ***Innovations in Methods of Teaching and Evaluation*** (This is important in terms of the latest developments in pedagogy). The use of innovative methods of teaching including lecturing,classroom management, use of educational technology including the computer, internet, web pages, evaluation methods used as feedback; seminar papers, review of books, microteaching exercise and others.

(v) ***Reading Material*** (The quality of reference material and books provided to the participants). Reference books available in the library during the course, journal articles suggested, reading material related to the content of the course, web pages suggested, CDs, etc.

(vi) ***Quality of Infrastructure*** (This deals with the quality and adequacy of learning resources and hospitable conditions). Classrooms, guest house facility, dining hall, library, laboratories, computer and educational gadgets, AC, separate office, internet, phone and others.

(vii) ***Flow of Funds*** (ASC courses are short-term fellowship programmes and therefore relate how the funds are received at the ASC). The release of funds by UGC on time, the time gap between requisition and the receipt of funds by the ASC, UGC guidelines followed in spending, submission of accounts, cooperation from the host university, qualified accounts staff, others.

(viii) ***Organisation and Management*** (The criterion relates to the use of / manpower and the expertise in management). Full time Director, staff position, functions of staff specified, advisory committee meetings, Vice Chancellor's attitude to ASC, cooperation from affiliated colleges, communication techniques used, staff meetings, leisure and entertainment, others.

(ix) ***Potential for Implementation*** (This takes into account how the training is ultimately passed on to the students at the institution level). Enthusiasm of the college/department to implement new ideas, interest of participants to implement, students feedback, principal/head opinion and others.

The above criteria can be used to assess the quality of staff development programmes offered by Academic Staff Colleges in India. The ASCs are offering broadly three categories of programmes and the focus of each course differs. As there are nine items of reference here and each item points out at a specific purpose, they are to be weighted depending upon the type of course involved for assessment. The orientation course is a basic course for newly recruited teachers for four weeks and the refresher course is of three weeks duration for senior teachers. The training programme for administrators is of short duration and is not related to any service condition. Therefore the following weightages are assigned to each category of the course out of a total score of 100.

| Sl. No. | Criteria | Orientation Course (U1) | Refresher Course (U2) | Admn Training (U3) |
|---|---|---|---|---|
| 1. | Content of course | 10 | 15 | 15 |
| 2. | Academic background of RP | 15 | 15 | 10 |
| 3. | Relevance of course content to UG/PG syllabi (present work) | 10 | 15 | 5 |
| 4. | Innovations in methods of teaching and evaluation | 15 | 10 | 10 |
| 5. | Reading material | 10 | 10 | 10 |
| 6. | Quality of infrastructure | 10 | 10 | 10 |
| 7. | Flow of funds | 10 | 10 | 10 |
| 8. | Organisation and Management | 10 | 5 | 15 |
| 9. | Potential for implementation | 10 | 10 | 15 |

The above criterionwise weightage is assigned keeping in mind the purpose and goal of each course.

*(Contd on page 10)*

# Bioinformatics: A Recent Development in Information Science

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Bioinformatics represents a new and growing area of science that deals with extensive use of computer techniques to store and process the biological information. Biology is a science of living things. From past few decades striding and continuous research and diligent studies are being carried out in the field of molecular biology. Bioinformatics is the interface between the area of information technology and life sciences including biotechnology. The tremendous interest in bioinformatics, a new discipline at the intersection of molecular biology and computer science, is fueled by the excitement surrounding the sequencing of the human genome- the complete gene complement of an organism, contained in a set of chromosomes (in eukaryotes), in a single chromosome (in bacteria), or in a DNA or RNA molecule (in viruses) - and the promise of a new era in which genomic research dramatically improves the human condition.

Bioinformatics work is concerned with the technology of databases, which provides a wealth of information on each of thousands proteins encoded by genome. Not only in the area of genomics (investigations into the structure and function of very large numbers of genes undertaken in a simultaneous fashion), bioinformatics has also a role to play in proteomics (the study of the full set of proteins encoded by a genome), analysis of protein sequences, protein interactions etc. Bioinformatics can be also a help in the study of evolution and phylogeny. Bioinformatics is a fertile new area for information scientists.

## Definition

Bioinformatics is the field of science in which biology, computer science and information technology merged to form a single discipline. In other words it is an emerging area arising from the demand of information analysis and management in the area of biology and biotechnology.

The National Center for Biotechnology Information (NCBI 2001) defines bioinformatics as: "... the field of science in which biology, computer science, and information technology merge into a single discipline. There are three important sub-disciplines within bioinformatics: the development of new algorithms and statistics with which to assess relationships among members of large data sets; the analysis and interpretation of various types of data including nucleotide and amino acid sequences, protein domains, and protein structures; and the development and implementation of tools that enable efficient access and management of different types of information".

According to Luscombe et al. (2001), bioinformatics is "Conceptualizing biology in terms of macromolecules (in the sense of physical-chemistry) and then applying 'informatics' techniques (derived from disciplines such as applied maths (sic), computer science, and statistics) to understand and organize the information associated with these molecules, on a large-scale".

Tripathi, KK, (2000) defines, Bioinformatics as "a computer assisted interface discipline dealing with the acquisition, storage, management, and access and processing of molecular data". According to Fredj Tekaia (2000) "Bioinformatics is the mathematical, statistical and computing methods that aims to solve biological problems using DNA and amino-acid sequences and related information."

## Origin and Development

The term bioinformatics was coined by Hwa Lim in late 1980's and popularized in the 1990s through its association with the human genome project (HPG). During mid 1980's various tools of computer for data storage, managing and accessing the information were developed. "PC/GENE - a software package was developed during 1980's, which could translate a given sequence of gene to its proteins and product with predictions of its secondary structure, it was first introduced by Intelli-Genetics from California." (Tripathi K.K, 2000). In the later years new software packages were developed according to the needs. Major landmark in the development of bio informatics are 'Human Genome project", emergence of World Wide Web (WWW), establishment of National Centre for

Biotechnology Information (NCBI), USA and the European Molecular Biology Network (EMB) both in 1988.

## Importance of Bioinformatics

Bioinformatics is both an engineering art and science where in new computational method are applied in the biological field to solve the biological problem. Since information is a powerful tool for research and developmental activities, bioinformatics has a significant role in the research and development issues of biologists, bioinformaticians and researchers. The data collection of DNA, RNA and Protein sequence and its analysis attracts most attention as it reduces time and cost for drug discovery. The ability to sort and extricate genomic codes from a human genomic database of about 3 billion base pairs of DNA is a good example of its contributions in 'Genomic revolution'. Bioinformatics plays a vital role in the analysis of protein-protein interactions and molecular pathways (the 'interactome'), in systematic studies of gene regulation (the 'regulome'), in the discovery of new molecular genetic markers, such as single nucleotide, polymorphisms and the use of these and other markers to dissect the genetic basis of disease and other phenotypes.

Bioinformatics is particularly, an international subject, with a notably high degree of information sharing among researchers in different countries (not to mention a strong tradition of making this information freely available to the public). The human genome project was a particularly good example of this multinational collaboration. In fact, the same data is often available from similar but slightly differing databases located in different countries. For example, GenBank (at the National Center for Biotechnology Information), together with the DNA DataBank of Japan and the European Molecular Biology Laboratory (EMBL) comprise the International Nucleotide Sequence Database Collaboration. These three organizations exchange data on a daily basis. While this sharing is highly admirable from a scientific standpoint that it does add to the sense of information overload and confusion for non-specialist librarians who approach this subject.

## Tools and Tecnology

Bioinformatics tools are available in the form of:

- Databases
- Software programmes and
- Internet sources

A number of tools are free to all individuals researchers and some are available on 'part payment' for academic institutions, however, some are available on full payment basis only. A fair amount of websites are available in the Internet which provide database and software programmes. Databases are even available on online as well as CD ROM forms.

## Databases

### *Sequence and other Non-Bibliographic Databases*

Sequence and other non-bibliographic databases are the central, most important type of information resource in this field. The multiplicity of databases makes selection confusing, and the databases themselves can be challenging to understand and navigate. Nomenclature is not standard. The following list of databases is intended to orient the reader to the major databases. To become a proficient searcher in each database takes considerable training.

## Nucleotide Sequences

GenBank - http://www.ncbi.nlm.nih.gov/Genbank GenbankSearch.html

GenBank is the nucleotide sequence database built and distributed by the National Center for Biotechnology Information (NCBI) at the National Institutes of Health. As of this writing, GenBank contains more than 13 billion bases from over 100,000 species, and is growing exponentially.

EMBL Nucleotide Sequence Database - http://www.ebi.ac.uk/embl/

The EMBL Nucleotide Sequence Database constitutes Europe's primary nucleotide sequence resource. Main sources for DNA and RNA sequences are direct submissions from individual researchers, genome sequencing projects and patent applications.

## Genome Databases

Entrez Genome - http://www.ncbi.nlm.nih.gov/entrez query.fcgi?db=Genome

The whole genomes of over 800 organisms can be found in Entrez Genomes. The genomes represent both completely sequenced organisms and those for which sequencing is in progress. All three main domains of life - bacteria, archaea, and eukaryota - are represent.

The Genome Database (GDB) - http://www.gdb.org/

The Genome Database is the official central repository for genomic mapping data resulting from the Human Genome Initiative.

KEGG: Kyoto Encyclopedia of Genes and Genomes - http://kegg.genome.ad.jp/

This database often appears in Google search results, so let's put it in context. Despite the name, this is actually a biocheProtein Sequences.

Entrez Protein Database -http://www.ncbi.nlm.nih.gov/entrez/Query.fcgi?cb=^Tc

The Protein database contains sequence data from the translated coding regions from DNA sequences in GenBank.

### Protein Sequences and Structure

Protein Data Bank (PDB) - http://www.rcsb.org/pdb/

The PDB was established at Brookhaven National Laboratories in 1971, making it the first public bioinformatics database. The PDB is now operated by the Research Collaboratory for Structural Bioinformatics (RCSB) which is a collaborative effort of the San Diego Supercomputing Center, Rutgers University, and the National Institute of Standards and Technology (NIST) etc. Database (PIR-PSD).

### MMDB: Molecular Modeling Database

http://www.ncbi.nlm.nih.gov/Structure/MMDB/mmdb.shtml

The MMDB is NCBI's structure database. It is a subset of three-dimensional structures obtained from the Protein Databank (PDB), excluding theoretical models.

### Bibliographic Databases

PubMed - http://www4.ncbi.nlm.nih.gov/PubMed/

For medical bibliographic citations this is the place to go. PubMed is the public interface to the medical literature database (MEDLINE) produced by the National Library of Medicine. PubMed provides access to over 11 million MEDLINE citations for articles and conference papers back to the mid-1960's. The NML online thesauri of controlled vocabulary MesH (Medical Subject Headings) are included to assist you in developing yours search strategies.

INSPEC®- http://www.iee.org/publish/inspec/about/ [subscription required]

For citations to computer science literature, start with INSPEC produced by the Institution of Electrical Engineers (IEE), INSPEC is the leading bibliographic information service providing access to conference papers and journal articles in computer science and information technology as well as electrical engineering and physics.

Chemical Abstracts and the Registry File - http://www.cas.org/ [subscription required]

For access to the chemical literature this is the place to start. Produced by CAS (Chemical Abstracts Service), Chemical Abstracts is the leading bibliographic information service providing citations to conference papers, journal articles, patents and other documents pertinent to chemistry (and it is to our advantage that they define chemistry very broadly).

BIOSIS Previews® http://www.biosis.org/productsservices/previews, html

BIOSIS Previews/RN is the world's largest and most comprehensive life database. It covers worldwide literature on all biological and biomedical topics.

### Software

- Software directories
- Tools in specific programming languages
- Open source software promoters

Bioinformatics Software Resource (BISR) - http://bioinfo.nist.gov/BISR/

A catalogue and clearinghouse of links to bioinformatics and computational biology software and resources. Over 400 packages are currently available, more than 70% of the software is free, and a variety of operating systems are supported.

Database Searching Browsing and Analysis Tools:

http://www.ebi.ac.uk/tools/index.html

Genamics Software Seek - http://genamics.com/software/index.htm

A repository and database of over 1200 free and commercial tools for use in molecular biology and biotechnolgy Tools in Specific Programming Languages. A list of software tools (programs) you can use via ExPASy Proteomics Tools - http ://ca.expasy.org/tools/

Tools for proteomics that may be used over the web, covering such categories as protein identification and characterization, similarity searches, secondary structure prediction, and sequence alignment.

### Internet Sources

There are web sites, which offer methodology and tips about various techniques employed in biotechnology, such as :

| | |
|---|---|
| Celera Genomics | http://www.celera.com |
| Incyte Genomics | http://www.incite.com |
| Cellular Genomics | http://cellularRenomics.com |
| EMBL-EBI/ The Sanger Centre | http://www.ensembl.org. |
| Structural and Genomix | http://www.stromixi.com |

On internet a number of sites are there which offer free access to their biological data bases. Only full text features are available on payment basis.

### Bioinformatics in India

India was one of the first countries in the world to initiate a Bioinformatics programme during 1987-1988. Department of Biotechnology (DBT) presently has a total, of 55 bioinformatics Centres spread across the nation, which include an apex centre, 10 Distributed Information Centers (DICS) and 44 sub-Distributed Information Centers (Sub- DICs). India has thus evolved a National Bioinformatics Network (NBN) for sustainable utilization of Biological Data available through online or offline methods. These centers have also built up capabilities to carry out Bioinformatics R&D activities towards the development of computational tools for the biotechnology application.

The centers are active in resource generation in bioinformatics through development of software and databases in frontier areas of biotechnology. They are also engaged in innovative bioinformatics research and development activities. The centres are interlinked through satellite links provided by National Informatics Centres Network (NICNET). These centers provide information helping in specific areas of biotechnology. Main objective of the network was to handle and manage biological data including its origin, control, linkages, analysis etc.

The BTIS secretariat is a coordinating and developing organization guiding the bioinformatics centers. BUS is fulfilling the needs of researchers and scientists working in various institutions and universities. Over 150 technical personnel are engaged to provide vital support to promote research in biotechnology.

The EMB net was established in 1988 to link European laboratories. It had about 34 nodes of which 20 are national nodes. There are 8 EMB net nodes for the maintenance of biological databases. Six sites are considered as associate nodes. Associate nodes are found to be linked with Australia-ANGIS, China-CBI, India- CDEB, Cuba-CIB, Argentina-IBBM and South Africa-SANBI. The main aim is to provide bio informatics services to the researchers. EMB net node in India is located at Center for DNA Finger printing and Diagnostics (CDFD) Hyderabad and its services are in the field of Genome (analysis and sequences). Protein 3 D modeling and molecular graphics.

BTIS net, New Delhi is found to be playing a key role in the field of bioinformatics in collaborating with EMB.

The BTIS is presently rendering its service in the area of creation of databases access and retrieval of information from it, information analysis and research development and training. Bioinformatics centers in India have developed several databases and software packages for Biotechnology research applications. The BUS net has endeavoured in establishing national databases in the country in collaboration with several national and international agencies and has encouraged bilateral and international collaboration in biomformatics, i.g. with EMB net, DDBTJ and NCBI etc. (Gurudev Singh and Joyti Kumari, 2003).

The bioinformatics centers under the BTIS Programme have also helped the overall growth of their respective host institutions. Centres like University of Pune, Pune; National Institute of Oceanography, Goa; Centre for Cellular and Molecular biology, Hyderabad; Anna University, Chennai; Calcutta University, Kolkata have established LAN/WAN with their respective organizations as well as different campuses spread across the cities.

### Training Programmes in Bioinformatics

Human resource development in bioinformatics has been one of the primary focus of programme. The programme has concentrated upon both short-term and long-term trainings initiatives. The various centers have conducted several training programmes/workshops. At least 200 researchers have been trained every year. This has helped in speeding the pace of biology research in the country. The lists of DICs and select list DISCs is given below:

### Distributed Information Centres

1. Biotechnology Information Centres, Department of Biotechnology, New Delhi (Genetic Engineering).
2. Bose Institute, Calcutta (Genetic Engineering).
3. Centre for Cellular and Molecular Biology, Hyderabad (Oncogene, Cell Transformation, Nucleic Acid and Protein Sequences).
4. Indian Agricultural Research Institute, New Delhi (Plant Tissue Culture and Virology).
5. Indian Institute of Science, Bangalore (Genetic Engineering).
6. Institute of Microbial Technology, Chandigarh (Enzyme Engineering and Microbial fermentation)
7. Jawaharlal Nehru University, New Delhi (Genetic Engineering).
8. Madurai Kamraj University, School of Biological Science, Madurai (Genetic Engineering).
9. National Institute of Immunology, New Delhi (Immunology).
10. University of Poona, Department of Zoology, Pune (Animal Cell Culture and Virology).

### Select list of Distributed Information Sub-Centres

1. Aligarh Muslim University, Bioinformatics Centre, Aligarh.
2. All India Institute of Medical Sciences, Department of Biotechnology, New Delhi.
3. Anna University, Centre for Biotechnology, Chennai.
4. Banaras Hindu University, School of Biotechnology, Varanasi.
5. Biotech Consortium India LTD, New Delhi.
6. Calcutta University, Department of Biophysics, Kolkata.
7. Cancer Research Institute, Department of Cell Biology, Bombay.
8. Central Drug Research Institute, Lucknow.
9. Devi Ahilya Vishwavidyalaya, School of Biotechnology, Indore.
10. Indian Institute of Technology, Department of Biochemical, Engg. and Biotechnology, New Delhi.
11. Indian Veterinary Research Institute, Izatnagar.
12. Kerala Agriculture University, Bioinformatics Division, Thrissur.
13. M.S. Swaminathan Research Foundation, Chennai.
14. National Dairy Research Institute, Karnal.
15. National Institute of Oceanography, Biological Oceanography Division, Goa.
16. University of Delhi, Department of Biochemistry, New Delhi.

At present in India many universities and Institutes are offering diploma and PG Diploma courses in Bioinformatics, which attracts number of young aspirants. DBT is providing assistance for MTech, course in Bioinformatics at the Indian Institute of Information Technology, Allahabad and a Post Graduate programme in Bioinformatics at the Institute of Bioinformatics and Applied Technology, Bangalore (INDIA-2003). Madurai Kamaraj University, Madurai and University of Pune, Pune have already been started various courses on bioinformatics. (Indian Institute of Chemical Technology (IICT) Hyderabad, along with Centre for Development of advanced Computing (C-DAC) Pune have introduced advanced diploma in Bioinformatics.

### Conclusion

Development in bioinformatics is greatly influenced by the information technology. Rapid development in this new field, in recent years had brought about enormous progress in the field of medicine food and Agriculture. It is contributing very significantly in drug development, pharmaceutical industry, agriculture and even food sectors. Apart from these areas it has vital role to play in the field of evolution Biology, Molecular Genetics, Biotechnology etc. Bioinformatics is today, a 'hot and happening' field. At present many countries of the world are investing remarkably to bring about developments in the tremendously growing subject of bioinformatics to view its capabilities for managing biological information that has exploded because of the diligent and untiring efforts of the scientists. The WWW has revolutionized the database searching to greater extent and the researchers are optimistic that "the web tools being developed will have more impact on the development of bioinformatics" (Sobral, 1997). However, there aren't enough experienced scientists who have an understanding of both computation and biology and can function effectively in this area. There is a need for more structured course, which will provide theoretical foundation and a working experience in different aspects of bioinformatics and biocomputing that there is a challenge left before the young scientists and researchers as how to integrate and harness the power of bioinformatics for a better future.

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*(Contd. from page 4)*

Since the Academic Staff College offers all the three courses, a composite index combining the scores of the three can be calculated. In the case of each unit of the ASC, the following formula can be followed to arrive at a score.

$$\text{Unit Score} = \Sigma C_i W_i / \Sigma wi$$

$$(i = 1,2, \ldots 9)$$

where $w_i$ = weightage of the $i^{th}$ criterion and $c_i$ = score of the $i^{th}$ criterion obtained

$$\text{The institutional composite score} = \frac{U1 + U2 + U3}{3}$$

The scores are obtained once the visiting committee or peer team validates the self study report submitted by the Academic Staff College for evaluation on the basis of the on site visit. The grade or rank to each college can be given after the evaluation of all the colleges in the country. As the weightage system is uniform and unbiased, the scores are comparable across the country. The same criteria should also be used to assess the quality of courses offered by independent RC centres in India. This will facilitate the assurance of quality of staff development that has a seed value for the overall development of higher education.

## Conclusion

Academic Staff Colleges are established to provide opportunities of staff development to teachers in higher education. During the last 15 years of their existence, the colleges have created an academic culture of self-development among teachers. The courses are linked with the career advancement of teachers. However, the evaluation of the programmes by the UGC through the visiting committees has not produced any concrete estimate. As the ASCs are now considered as important units to improve quality of teaching-learning process in the country, its quality assessment is critical for the future of higher education. A 9-point criteria are suggested here to assess the Quality of Academic Staff Development in India. This will go a long way in assuring quality of the academic staff programmes. ❑

# Performance in the University Examination and Associated Factors: A Study of First Year Health Science Students

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One of the major problems faced by health science courses (medical and dental science) in India is the failure rate especially at the end of the first year. This is often considered as wasteful, both to the society and to the individual. Research in this field/pre-clinical course is necessary to improve understanding of the difficulties students face by investigating students' experiences of learning in health science education.

Students approach their learning in different ways depending on the context and environment in which the learning takes place. Characteristics of the teaching, the curriculum and the student are the three major components, which influence student learning. Teaching and course characteristics produce a variety of learning environments or contexts, which cause students to vary their approach to learning in response to these pressures (Newble & Entwistle; 1986). The approach students use in their study has a significant impact on both the quality of the learning and their academic success. It would clearly be of value to identify students whose approach to learning was predictive of unsatisfactory performance.

Sevensson (1977) reported that students who consistently adopted a deep approach were more successful in passing examinations than those students who consistently adopted a surface approach. Clarke reported better prediction of performance by subscales that address affective domain of the inventory than those which address 'cognitive styles'. Newble et al.(1988) observed consistent correlation between poor performance of medical students and the surface approach subscales of Adelaide Diagnostic Learning Inventory. Another study among medical students using short version of the Approaches to Studying Inventory showed significant negative association between reproducing orientation and academic performance (Stiernborg and Bandaranayake, 1996).

Poor study approaches are one of reason for failure. Many a time students express difficulties with the courses they are studying. These difficulties may influence the process of learning. The frequently reported problems in the literature are difficulty in organizing study time effectively, overloaded feeling with vast study material, decreased motivation, difficulty in seeing the relevance of some subjects, difficulty in recalling previously acquired knowledge, difficulty in applying acquired knowledge to practical situations (Coles, 1990). Presage factors like traditional conceptions of learning and teaching imbibed from early youth, language ability in the current medium of instruction, cultural values and expectations concerning achievement and lifestyle factors requiring adjustment in the new environment are some of the factors which may affect the student's performance directly or indirectly, through their influence on learning process (Biggs, 1987).

Lack of prerequisite knowledge and/skills for understanding the course, inappropriate study strategies, lack of self-confidence about ability to do well in the course were found to be some of the basic problems in learning (Cross & Steadman, 1996).

Considering these aspects the present study was undertaken to identify the factors associated with the performance of first year medicine (MBBS) and dental science (BDS) students of Manipal Academy of Higher Education (MAKE).

## Materials and Methods

***The Instrument:*** Approaches to learning inventory (ALT) was used to collect data on approaches to learning and learning difficulties (Shreemathi, 2001). This inventory was developed to collect data on approaches to learning and learning difficulties of health profession students, taking into account the students' English language ability and Indian academic environment.

ALI is a self-report questionnaire containing 90 items in which 53 items of this inventory were grouped into nine subscales to study the association between scale scores and performance in the university examination and the remaining items were treated individually to obtain qualitative data. Further, subscales 1-3 were treated as subscales under the main scale 'Negative approach' to learning and subscales 4-7 were treated as subscales under the main scale 'Positive approach' to learning.

Students' response to each item was scored on a five-point Likert-type scale from 5 for 'Always' to 1 for 'Never'. Adding the response to each item on the subscale resulted in the score for each subscale. Adding the subscale scores produced main scale scores. The Meaning of the scale and subscales are shown in Table 1.

The items under the subscales of negative approach, non-academic distractors' scale and English language ability scale are worded in such a way that low scores are desired on those scales for (Example: I find it difficult to speak and express myself in English). Higher scores on subscales of negative approach indicate that the respective negative approach is more pronounced. Higher scale scores indicate that non-academic distractors are a more significant problem. On the English language scale, higher scale scores are associated with lower or less proficient English language ability.

On the other hand, the items under subscales of positive approach are worded in such a way that high scores are desired on those scales (Example: After each exam I review my answers and try to correct myself). The higher the score on subscales of positive approach, more is the respective positive approach/ characteristic.

These scales and subscales were validated by experts. The internal consistency coefficient, Cronbach's Alpha, for these scales, based on the responses of 1928 health science students'of various specialities were within the acceptable limits (Table 2).

**Table 1 : Inventory scales and scale description**

| Scales and Sub-scales | Description |
|---|---|
| **Negative approach includes:** | |
| 1. Fear of failure and lack of confidence | Lack of confidence in completing the course and asking questions, anxiety about examination. |
| 2. Perceived academic inadequacy | Failure to distinguish, understand, summarize and recollect. |
| 3. Surface approach | Intention to complete task requirement, rote learning, memorize information needed for assessments and accepting teachers' opinion without thinking. |
| **Positive approach includes:** | |
| 4. Motivation and interest | Intention to obtain highest possible grades, interest and involvement in reading |
| 5. Organized study | Organize time and material for studying appropriately, regular revision. |
| 6. Strategic processing | Use of study aids, discussing while studying, solving previous exam papers. |
| 7. Deep processing | Active questioning in learning, effort to understand new material, relating ideas to previous knowledge and relating concepts to everyday experience. |
| **8. Non-academic distractors** | Homesickness, uncomfortable living environment, personal, health and financial problems |
| **9. English language ability** | Difficult to understand, speak, read and write in English. |

**Table 2 : Cronbach's alpha for scales and subscales**

| Scales and Subscales (no. of items) | Cronbach's alpha * (n=1928) |
|---|---|
| Fear of failure and lack of confidence (4) | 0.59 |
| Perceived academic inadequacy (4) | 0.60 |
| Surface approach (4) | 0.62 |
| Negative approach (12) | 0.78 |
| Motivation and interest (6) | 0.57 |
| Organized study (9) | 0.76 |
| Strategic processing (8) | 0.66 |
| Deep processing (8) | 0.76 |
| Positive approach (31) | 0.89 |
| Non-academic distractors (6) | 0.61 |
| English language ability (4) | 0.71 |

*Data collected during the development of the inventory (Shreemathi, 2001).

## Sample

The inventory was administered to the first year medicine and dental science students to collect data. University examination marks were collected from the Office of the Controller of Examinations, Manipal Academy of Higher Education.

## Data analysis

An association between inventory scale scores and performance was assessed through simple correlation and multiple regression analysis (Snedecor and Cochran, 1967). Simple correlation between scales and university examination marks indicates the importance of scales when each one was used individually to predict marks.

Subset of scales that, for the sample, are good predictors of performance, was identified by step-down multiple regression analysis. Coefficient of determination, $R^2$ is presented for the identified subset. Significance of $R^2$ was tested by Fisher's 'F test. Coefficient of determination $R^2$ is the percentage of the total variation in marks, accounted for by the best set of scales.

## Results

Simple correlation between subscale scores and university examination marks of the first year MBBS and BDS students are shown in Table 3.

All the inventory subscales except strategic processing and English language ability scale showed significant correlation with university examination marks of medical students. The subscales motivation and interest, organized study and deep processing have shown positive correlation with performance. The correlation of performance with fear of failure and lack of confidence, perceived academic inadequacy, surface approach and non-academic distractors scale were negative (Table 3).

Significant positive correlation was found between performance and motivation and interest, and significant negative correlation was found between fear of failure and lack of confidence, perceived academic inadequacy, surface approach and non-academic distractor scale scores of BDS students (Table 3).

## Best Set of Subscales Associated with Performance

Best set of scales associated with performance of medical students and coefficient of determination $R^2$ are shown in Table 4.

The best set of scales explained 30.14% of the

**Table 3 : Correlation between university examination marks and subscale scores of the inventory**

| Scales | MBBS (n=204) | BDS (n=76) |
|---|---|---|
| Fear of failure and lack of confidence | -0.341** | -0.491** |
| Perceived academic inadequacy | -0.354** | -0.537** |
| Surface approach | -368** | -0.451** |
| **Negative approach** | **-0.444*** | **-0.572**** |
| Motivation and interest | 0.345** | 0.298* |
| Organized study | 0.348** | 0.157 |
| Strategic processing | 0.136 | 0.055 |
| Deep processing | 0.276** | 0.159 |
| **Positive approach** | **0.342**** | **0.186** |
| Non-academic distractors | -249** | -0.469** |
| English language ability | 0.103 | -0.083 |

**Table 4 : Best set of scales associated with performance of medical students**

| Predictor variables@ | (R2 %)* | F-value | Degrees of freedom | P-value |
|---|---|---|---|---|
| Fear of failure and lack of confidence (-0.23)<br>Surface approach (-0.222)<br>Organized study (0.214)<br>English language ability (0.158)<br>Motivation and interest (0.148) | 30.14 | 17.08 | 5,198 | <0.0001 |

@Values inside the parenthesis are standardized regression coefficients

*Coefficient of determination

**Table 5 : Best set of scales associated with performance of BDS students**

| Predictor variables@ | (R2 %)* | F-value | Degrees of freedom | P-value |
|---|---|---|---|---|
| Perceived academic inadequacy (-.474),<br>Motivation and interest (0.452),<br>Organized study (-0.331),<br>Non-academic distractors (-0.281),<br>English language ability (0.210), | 45.18 | 11.53 | 5,70 | <.0001 |

@ Values inside the parenthesis are standardized regression coefficients
*Coefficient of determination

variation in the marks of first year medical students. Standardized regression coefficients indicated that fear of failure and lack of confidence, surface approach, organized study, English language ability, motivation and interest in that order were important in explaining the variation in marks (Table 4). Table 5 shows best set of scales associated with performance of dental science students.

The best set of scales explained 45.18% of the variation in the marks of BDS students. Standardized regression coefficients indicated that perceived academic inadequacy, motivation and interest, organized study, non-academic distractors and English language ability in that order were important in explaining the variation in marks (Table 5).

## Discussion and Conclusions

Performance is a function of the nature of the materials to be learned, the characteristics of the learner (current knowledge, skills and attitudes), the learning activities and the kind of assessment used to evaluate the degree of learning (Bransford, 1979).

In the present study, motivation and interest, perceived academic inadequacy, fear of failure and lack of confidence, surface approach and non-academic distractor scales have shown correlation with performance of both medical and dental science students. The study supported similar findings of earlier studies that, the most consistent predictor of academic performance resides in the affective domain (Clarke, 1986; Newble et al.,1988)/reproducing orientation (Stiernborg and Bandaranayake, 1996) of the inventory rather than the cognitive.

Joint contribution of various scales to the variation in performance was 30.14% and 45.18% for first year medical and dental science students respectively. These findings indicate the diagnostic potential of the instrument in identifying specific factors that may contribute to unsatisfactory student performance.

Ideally, the inventory would help to predict students who are likely to fail during the first year of study. Prediction cannot depend solely on such an inventory, as poor study methods and skills are only one reason for failure. It may not be possible to know the nature and extent of student difficulties using the inventory. It can be used as an aid to select areas of advice in which the student appears to be having difficulty.

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# Convergence of Technologies

**A P J Abdul Kalam, President of India delivered the Convocation Address at the second convocation of the North Orissa University, Mayurbhanj on 15th May, 2003. He said, "We have identified five areas where India has a core competence for an integrated action. (i) Agriculture and food processing—We have to put a target of 360 million tons of food and agricultural production. Other areas of agriculture and agro food processing would bring prosperity to rural people and speed up the economic growth. (ii) Reliable and quality electric power for all parts of the country. (iii) Education and Healthcare—We have seen, based on the experience, education and healthcare are interrelated. (iv) Information Communication Technology—This is one of our core competences. We believe, this area can be used to promote education in remote areas and also to create national wealth. (v) Strategic sectors—This area, fortunately, witnessed the growth in nuclear technology, space technology and defence technology. Other areas like Advanced Sensors and Materials would need a push. The nation has a plan towards 70% near self-reliance in a decade in defence equipment". Excerpts.**

## Bio-Vision

Mayurbhanj is rich in archaeological sites and many tools of prehistoric cultures have been discovered in and around this area. The Simlipal Hills with their scenic beauty, the lush green valleys, the streams and rivulets cascading down the hills have captivated man since time immemorial. It is therefore very apt that this fledgling North Orissa University has been set up at such a pristine location. I am sure it provides a stimulating and challenging environment for the students to undertake their studies.

## Biodiversity: Technology-Prosperity Matrix

One of the core competences of India is biodiversity. Biodiversity and technology combined will yield value added products. In biodiversity few countries like India, China, Brazil, Indonesia, arid Mexico are very rich. Technology is needed for developing a genetically engineered seed or transforming a molecule extracted from the herb into a drug. Today technologically advanced nations in this field are the USA, Japan, France, Germany and the UK. What is needed is high productivity in farming, biodiversity material and technology integrated. There are some regions in desert nations where biodiversity and tech are poor. Today there is no nation having rich biodiversity and high technology together. Therefore the challenge is integration of technological best and abundant biodiversity of India.

## Value Addition

India is rich in herbs, germ plasm and micro organisms. Industrially developed countries are importing these bioresources in the raw forms and add value to them for export to developing countries including India as special seeds, medicines and biomaterials, fully protecting patents of these products. Instead of allowing export of such resources and importing value added products at high cost, India must add its own technology for conversion of such resources to value added products for use in domestic requirement and also for export.

It is therefore very heartening to note that the North Orissa University has started postgraduate courses under self-financing schemes of tribal studies, biotechnology, wildlife and conservation biology, environmental sciences, information technology, management etc. I find that since the tribal districts of Mayurbhanj and Keonjhar are rich in mineral deposits, there is enough scope for students to undertake studies and research in the areas of mineralogy, environmental sciences, forestry, wildlife, ethno botany, biotechnology and anthropology etc. The University should also endeavor to bring about a fine blend of tribal and nontribal cultures here so that we can have a synthesis of the rich and diverse cultural and historical heritage of this region. The University should also endeavor to promote the social and economic well-being of this region by conducting research and by holding seminars and conferences to highlight the unique aspects of the people and the areas of this region and also to provide a bridge between the people of this area and that of the more advanced neighbouring regions. In short, the University should act as a guardian angel of the sociocultural streams of this region.

## Economic Growth in Different Societies

During the last century, the world has undergone a change from agriculture society, where manual labour was the critical factor, to industrial society where the management of technology, capital and labour provided the competitive advantage. Then the information era was born in the last decade, where connectivity and software products are driving the economy of a few nations. In the 21st century, a new society is emerging where knowledge is the primary production resource instead of capital and labour. Efficient utilisation of this existing knowledge can create comprehensive wealth of the nation and also improve the quality of life in the form of better health, education, infrastructure and other social indicators. Ability to create and maintain the knowledge infrastructure, develop knowledge workers and enhance their productivity through creation, growth and exploitation of new knowledge will be the key factors in deciding the prosperity of this Knowledge Society. Whether a nation has arrived at a stage of knowledge society is judged by the way the country effectively deals with knowledge creation and knowledge deployment in all sectors like IT, Industries, Agriculture, Health Care etc.

While laying stress on our historical and cultural ties, we should also understand that the need of the hour is our technological excellence especially in the areas of critical technologies. In case India is to have a rapid economic growth, in that case the main thrust should be on the development of indigenous technologies. Our system of education and skill generation can best perform in record time to make India into a developed country only by the proper application of various forms of new technologies. For example, the area of information technology has suited our skill and knowledge levels to a great extent. As a result of this, India has been able to do fairly well in this field. However, we should also seek out newer areas of the future in which we could put our skills and knowledge management to full advantage. With a proper mindset and with the proper utilisation of the great opportunities, which are opening up, we shall be able to play a leading role in the great socio-economic transformation which is taking place in our country as well as in the whole world. Our human capital is one of our biggest assets. We have one of the world's largest pools of scientists and engineers and in case we are able to provide them with the necessary skills and tools to compete in an ever competitive world, I'm sure you would have done your bit for our country.

## Convergence of Technologies

As the North Orissa University has rightly a syllabus for Post Graduate education in biotechnology and also studies on tribals. It is very import when teaching enrich research, research is enriched by teaching. Hence, I expect the University professors and teachers to visualize a situation, that is convergence of technologies. The information technology and communication technology have already converged leading to Information and Communication Technology (ICT). Now, nanotechnology is knocking at our doors. It is the field of the future that will replace micro electronics and many fields with tremendous application potential in the field of medicine, electronics and material science. When nano technology and ICT meet, an integrated silicon electronics, photonics is born and it can be said that material convergence will happen. When communication technology integrated silicon electronics, photonics and sensors converges, we find radio chip and intelligent roaming. When biological science added with radiology, super humans will emerge. That means knowledge powered human beings. There will be nothing like an exclusive subject like biotechnology, information technology or robotics science, in future. They all try to converge. Better this University is aware of the trends of the future so that we prepare the students and the research areas in the most useful and profitable way.

## The Vision for the Nation

After 50 years of progress, the aspirations are mounting that India should become a developed country. This is the second vision for the nation. How can we prepare ourselves to this challenge?

To become a developed India, the essential needs are (a) India has to be economically and commercially powerful, at least to be one of the four top nations in terms of size of the economy. Our target should be a GDP growth of 9% annually and that the people below poverty line to be reduced to near zero, (b) near self-reliance in defence needs of weapon, equipment with no umbilical attached to any outside world, (c) India should have a right place in world forums. Technology Vision 2020 is a pathway to realise this cherished mission.

We have identified five areas where India has a core competence for an integrated action. (i) Agriculture and food processing — We have to put a target of 360 million tons of food and agricultural production. Other areas of agriculture and agro food processing would bring prosperity to rural people and speed up the economic growth. (ii) Reliable and quality electric power for all parts of the country. (iii) Education and Healthcare — we have seen, based on the experience, education and healthcare are inter related. (iv) Information Communication Technology — This is one of our core competences. We believe, this area can be used to promote education in remote areas and also to create national wealth. (5) Strategic sectors — This area, fortunately, witnessed the growth in nuclear technology, space technology and defence technology. Other areas like Advanced Sensors and Materials would need a push. The nation has a plan towards 70% near self-reliance in a decade in defence equipment.

These five areas are closely interrelated and would lead to national, food, and economic security. A strong partnership among the Research and Development, academy, Industry and the community as a whole with the Government departments will be essential to accomplish the vision.

In all our attempts, we need the drive and initiative of young people like all of you who are graduating today. Yours is a fledgling University, I can see. However, you have enormous potential both in your manpower as well as in your natural surroundings. It is therefore up to all of us, to ensure that we make the best use of our facilities and our natural endowments to see that the University develops, the state develops and so does the nation.

### Conclusion

The next 20 year period, I consider, is a period of technological transformation of India. I anticipate new emerging economic and technical situations where there will be many new technologies which can help us develop. India is now standing at the gate of the knowledge society and with our skill development in the field of information technology what we need is an entrepreneurial push and an increase in our competitiveness. With these tools we will be prepared to take on the new trends as in the case of Internet and with minimal government interference and support and we can hold our head high and stand amongst the internationally developed countries of the world. My experience of working has shown that we need role models who will ignite the minds of the young people. My appeal to all the teachers, the lecturers, the professors and the staff of this University is that you have a key role to play in the development of the minds and vision of these young leaders of today. They look up to you as role models for their future and if we are successful in igniting their minds, we would have done a great service not only for this university but also for the state as well as for the nation. In this gathering in front of me today I can see a virtual image of India with all its myriad forms. The colourful tribal culture, the simple and pristine surroundings, and the cultural pageantry of the area have really sent happy feeling in my mind. I get an impression that the Indian mind has begun to get ignited and with an ignited mind I'm sure that one can move the most powerful forces on the earth, under the earth and above the earth. ❑

## CALENDAR OF EVENTS

| Proposed Date of the Event | Title | Objectives | Names of the Organising Department | Name of the Organising Secretary/ Officer to be contacted |
|---|---|---|---|---|
| Dec 11-13, 2003 | International Symposium on Clinical Data Management | To create a forum for European, Asian and US Life Sciences organizations and academic to interact, exchange, learn and implement the latest advances in clinical data management as per ICH-GCP standards;<br>To offer an opportunity for the exchange of ideas and experience on campus between participants and international practitioners of CDM;<br>To reinforce the learning from the sessions, tutorials and work on case studies;<br>To describe the role of CDM in drug development: Application of good clinical practice for data management; Define the major steps involved in the flow of clinical data; Regulatory affairs involved with clinical data management. | Institute of Bioinformatics & Biotechnology, University of Pune, Pune. | Prof. Indira Ghosh, Convenor<br>(M) 09890397771 or Shri Guljit Chaudhri, Convenor<br>(M) 09810027227;<br>Institute of Bioinformatics & Biotechnology, University of Pune, Pune 411 007.<br>Email:clinic@ibbpune.org<br>Fax: +91 20 569 0087;<br>Phone: +91 20 569 0195, 569 2039 |

# CAMPUS NEWS

## Refresher Course in Inter-disciplinary Research in Education

The Department of Applied Research, Gandhigram Rural Institute - Deemed University, Gandhigram organised a UGC sponsored Refresher Course on 'Inter-disciplinary Research in Education' recently. The major objective of the Course was to impart knowledge and expertise in the research process, to develop skills in statistical application and to appraise college and university teachers about the recent trends and models in interdisciplinary approach to research. The Course was mainly meant for teachers in behavioral, social and applied sciences and was designed with a view to enhancing the competency of the teachers in research guidance.

Inaugurating the Refresher Course, Dr. G. Pankajam, Vice Chancellor, observed that the research should benefit the society. "The inter-disciplinary approach can analyse complex social problems and develop appropriate strategies for solving them," she said. She added that we are accountable to the society which pays our salaries. She also stressed that inter-disciplinary research in any area should be need-based and people-oriented. The Vice Chancellor also emphasised the significance and relevance of field-oriented action and intervention research for solving the immediate problems faced by the society. Dr. N. Markandan, Formely Vice Chancellor, of the Institute in his keynote address indicated that research is required, for it addresses current and burning issues like education for all, poverty alleviation, environmental pollution, etc. Interdisciplinary research has a wide scope, and he further stated that research findings should be considered to develop policies and programmes.

Dr. A. Suriyakanthi, Faculty in-charge of Rural Development, in her presidential address, highlighted the relevance of interdisciplinary research for rural development and insisted that the refresher course should enable the teachers to discuss the issues of methodology in research. There were more than 56 lecture-cum- discussion sessions handled by 36 resource persons from various disciplines (Education, Psychology, Statistics, Physical Education, Commerce, Women Studies, Sociology, Political Science, Computer Science, Biology, Economics, Environmental Education, Special Education & Interacting with the disabled etc.). Apart from the academic sessions, the participants were given orientation in field research and were taken to villages. They were given field training in conducting Participatory Rural Appraisal and evaluation of the NGO Programmes.

Dr. C.E. Sooriyamoorthy, Professor Emeritus, Centre for Solar Energy, Madurai Kamaraj University, while delivering the valedictory address noted the importance of the interdisciplinary approach in solving the energy crisis which is now threatening India, particularly the rural community. He also appealed to the teachers to apply the modern information system in teaching and research.

Dr. M.A. Sudhir, Professor and Head, Department of Applied Research reiterated that there is a specific need to popularise interdisciplinary approaches to promote research in Education and Social Sciences. Before concluding his vote of thanks, he added that refresher courses in applied research can and do enhance the standard and quality of research in colleges and universities by empowering the teachers with advanced methods and techniques to undertake scientific studies.

## SAARC Law Centre at NALSAR

A SAARC Law Centre (M K Nambyar SAARC Law Centre for Advanced Studies and Research) first of its kind in South Asian Association of Regional Cooperation member countries, for promoting legal studies and research besides friendship among legal fraternity of SAARC countries is being established at National Academy of Legal Studies and Research University, (NALSAR) Hyderabad. The Memorandum of Understanding (MoU) to this effect was signed recently by Mrs. Dhara Wijayatilake, President, SAARC Law and Secretary, Ministry of Law and Justice, Sri Lanka; Prof. Ranbir Singh, Director, NALSAR; Mr. K K Venogopal, Senior Advocate, Supreme Court and former President SAARC Law. Mrs. Wijayatilake, and other SAARC Law officials of Bangladesh, Pakistan and India who visited India to sign the MoU appreciated the development process at NALSAR and described it as 'Harward of the East'. The Centre named after the Advocate and Constitutional Expert M K Nambyar is being setup with Rs. 1.5 crore donated by Mr. K K Venugopal on behalf of M K Nambyar SAARC Law Charitable Trust. After handing over the cheque to Prof. Singh, Mr. Venugopal said that his father Justice M K Nambyar argued the historic constitutional law case of Shri A K Gopalan in the early Republic of India when there were hardly any precedents to make effective argument, and when he thought it would be befitting to establish such a legal research center in his name. Mr. Venugopal recollected the days of legal education during early 1950's where necessary infrastructure was lacking and advised the students to make the best use of NALSAR where interactive intensive education with case study method was made available.

Mr. K K Venugopal is the trustee of Shri M K Nambyar SAARC Law Charitable Trust which is an association of lawyers, law teachers and persons possessing academic qualifications in law. It is recognized by SAARC as a non-governmental apex body representing legal provision in the SAARC region. The center at NALSAR will be established with Rs.1.5 crores aiming at awarding scholarships to students from SAARC countries for the pursuit of legal studies and research. Further the objectives of the center are to provide for the conduct of academic courses for the pursuit of advanced legal education (including higher studies in Master of Law and courses in specialties and super specialties in various branches), the conduct of research and other studies in law, the conduct of other activities related to the advancement of legal studies and the publication of journals and other legal materials for the benefit of lawyers and academics from the SAARC countries.

The trust donated Rs. 50 lakhs as outright grant for the purpose of construction of fully equipped building of 'M K Nambyar SAARC Law Centre' for conducting lectures, conferences, meetings, moots, research and other activities. In addition, the trust gave NALSAR a corpus fund of Rs. 1 crore which shall be held for the benefit of the center and the interest or income of which would be utilized for the purpose of scholarships and other expenses in connection with the objectives. The NALSAR has agreed to provide facilities of teaching, hostel for stay, medical, library, computers, sports and all other facilities to the SAARC Law students pursuing their research in the center.

### Seminar on Industry-Institute Interface

A National Level Seminar on Industry-Institute Interface — Margdarshan was organized recently by the Bharati Vidyapeeth's Institute of Management and Research, New Delhi. Heads of some leading industries involved in the Seminar to guide about the practical aspects and current trends prevalent in the corporate world to enable the budding managers to get well equipped with the knowledge and skills required for working in the corporate world.

Mr. Faiz M. Ali, President, Raymond's was the Chief Guest of the occasion. Dr. K. Subramanian, Advisor AICTE was the Chairperson. Speaking on the occasion Mr. Faiz M Ali emphasized on the final aspects of management by referring to its concept as very significant. He further sated that sincerity and honesty are the hallmarks of professionalism and there are no shortcuts to success except for hard work and dedication.

Mrs. Kirti Sharma, Coordinator of the Seminar highlighted that the Seminar would enable the future Managers to direct their energies towards the achievement of the ultimate goal. In his speech Dr. K. Subramanian spoke about the role of AICTE in acting not only as supervisory and regulatory body but also as facilitator in providing the necessary resources for conducting various Faculty Development Programmes, Seminars etc. or an ideal industry institute interface.

Dr. S S Vernekar, Director, BVIMR in his inaugural address spoke about the importance of organizing seminars and workshops. He highlighted BVIMR's achievement on various fronts. In the session on 'Expectation of the Industry from the Management students' Mr. Suman Gupta, Zonal Head North Ranbaxy (Solus), Mr. A.R. Banerjee, Controller UB Group Spirit Division, Mr. Alok Bhattacharaya, Head HR Sri Ram Pistons and Rings Ltd. were the speakers. Mr. Alok Bhattacharya spoke on the current employment market driven by choice where talent wars and price wars are going on. Mr. A R Banerjee elucidated financial concept and emphasized on the value addition by an individual to the organization in his presentation. Mr. Suman Gupta stressed upon being positive, humble, creative and willing to stretch according to the situation.

The session on 'Existing opportunity and growth prospects for Indian Managers' was addressed by Dr. Y V Verma, Vice President (HR and MS ) LG Electronics; Mr. P.K. Gupta, Director, Legato Systems India; Mr. Kuldeep Sharma Chief Executive Suruchi Consultant; and Mr. M K Batta, Senior Manager (Exports) Oriental Carbon and Chemical Ltd. Dr. Y.V.Verma spoke about the importance about being flexible to different work conditions. Mr. P.K Gupta said that the managers who can do well in an era of competition and the people who can create personal brands ready for rapid trials, rapid learning and rapid commitments can only survive. He further stated that the opportunities were unlimited. Mr. Batta briefed about the existing opportunity in the arena of international business which shows that the exports are growing at the rate of 12% p.a.

### Biotech Centre at University of Delhi

The University of Delhi, Delhi and the Delhi State Industrial Development Corporation (DSIDC) reportedly have launched a commercial venture for carrying out research in bio-technology. As a part of it, a new biotech center is being constructed in the University to take up research projects sponsored by private companies. According to Shri Jalaj Shrivastava, Managing Director, DSIDC the center would encourage collaboration between industry and the university.

### Arya Bhatt Hall at Dr. B R Ambedkar University

Dr. Bhimrao Ambedkar University, Agra had recently built a Hall at its Khandari Premises and named it as Arya Bhatt Hall. Prof. Arun Nigavekar, Chairman, UGC inaugurated the Hall. In his inaugural address he illustrated that if about nine million students receiving higher education every year are trained in job oriented professional courses, 84 per cent graduates may get a vital solution to the prevailing unemployment problem. He added that the education should be co-related with Diploma and Certificate Courses so that it can provide significant utility for the students of BA, B.Com, B Sc, etc and make them competent for jobs. Clarifying the plan, he added, that the students studying BA(History) should necessarily be taught the subject of Communication in the first year, Tourism in the second year and a course for guides in the third year by charging a fee of Rs. 1,000 per annum. "This scheme tends to make the students self-dependant. This will also help to connect the service industry with education. The UGC shall provide more aid to the universities implementing such schemes," he said.

Prof. Nigavekar further announced that the universities all over India following and implementing prescribed UGC standards and guidelines shall be chosen as Universities of Potential Excellence and a special grant of Rs. 30 crores has been reserved for disbursement to them. "All the universities of the country are being connected to the UGC through the Internet. Till now 120 universities have already been connected. After accomplishment of this project, about 5,500 colleges of the country would be linked to the UGC through the internet," he said. He added that every university of the country is at present spending Rs. 5 to 6 million on purchase of printed journals. "Very soon the UGC is going to start an e-journal in lieu of printed journals. On initiation of this programme, this unwarranted expense of universities could be stopped and spent on their own infrastructure," he said.

### PRAGYA – 2003

A National Summer Training Project Report Contest, Pragya - 2003 was organized recently by the Prestige Institute of Management and Research (PIMR), Indore. Shri R.P. Sinha, General Manager, State Bank of Indore inaugurated the project. Mr. Sinha in his inaugural address highlighted the importance of out of the box strategies that need to be adopted for management studies in the new era. Dr. Upinder Dhar, Director, PIMR briefed the gathering about PRAGYA and the importance of summer training in the curricula. Nearly 88 students representing 30 institutions across the country participated in the project. Out of 88 participants, 15 students were short-listed for final presentation by a panel of subject experts. The shortlist students were from NITIE, Mumbai; School of Management, IIT Mumbai; B.K. Institute of Management, Coimbatore; FOMS, Jabalpur; IMS, Indore; GSIMR, Indore; BIM, Trichy; Narsee Monjee Institute of Management studies, Mumbai; S.P. Jain Institute of Management, Mumbai; Navjeevan Institute of Management, Nashik and Institute of Technology & Management, Warangal.

The panel of judges for the event constituted of Mr. Ashok Chaurasia, Divisional Manager (Finance), Hindustan Motors; Mr. Neel Jain, Sale Manager, British Airways; Mr. Sanjay Shaw, Executive, Training Center(HRM), Hindustan Motors; Mr. Amrish Kanungo, Senior Executive (HRM), Impetus; and Mr. Sameer Bhale, Software Engineer, Impetus Indore. The students were evaluated on the lucidity of their topic, creativity and worth of suggestions and recommendations, layout of the project in terms of completeness and overall impression.

Shri K.S. Ramesh of NITIE, Mumbai was adjudged as the overall topper and was given a cash prize of Rs. 10,000/-. Ms. Sheetal Tripathi of GSIMR, Indore was topper in the area, Shri Soham J Joshi of B.K. Institute of Management Ahmedabad was the area topper in finance. Shri Pratibh and Ms. Archana of Tolani Institute of Management Studies, Adipur were adjudged as toppers in General Management.

### National Workshop on Electronic Resources for Management Schools

A National Workshop on Electronic Resources for Indian Management Schools – ERIMS was recently organized by the Indian Institute of Management, Lucknow (IIM-L). Prof. Roshan Lal Raina, Director, IIM-L, in his introductory address told about the background of setting up of a special interest group under the name 'Electronic Resources for Indian Management Schools (ERIMS)' as well as the basic objectives of the ERIMS Workshop. Dr. Devi Singh, Director, IIM-L in his welcome address, while lauding the efforts of the MHRD (GOI) for its Indian National

Digital Library in Science and Technology (INDEST) as well as ERIMS initiatives, requested the Chairman, National Steering Committee (NSC) of the INDEST Consortium to be considerate to the e-resource requirements of the Indian Management Schools. Relating the role of MHRD (GOI) vis-à-vis the INDEST as well as ERIMS initiatives, Dr. Pawan Agarwal, Director, MHRD (GOI), emphasized on the need of ensuring optimal utilization of the e-resources made available to the participating institutions. Highlighting the *open ended* as well as *dynamic* nature of the INDEST/ERIMS initiatives, Dr. Agarwal invited all leading Indian management schools to join the ERIMS-INDEST Consortium. Delivering the inaugural address, Dr. Sirohi, Chairman, NSC, INDEST pointed out that the success of all such initiatives will ultimately be measured in terms of increase in intellectual output of all the participating institutions.

Dr. Jagdish Arora, National Coordinator, INDEST in his talk summed up his INDEST experience. Explaining the open ended structure of INDEST, he informed that there were 60 core members and 16 self supporting members, and took the opportunity to invite new members to join. Dr. Arora listed the products currently under subscription and the products which were in the pipeline, mostly for Indian management schools. Dr. Arora also told that INDEST had plan for various other services. Application server provider, joint storage facility, union catalog using z39.50, shared e-reference were few among those services. Sustenance, continuity and active support from the members were also emphasized. Dr. Arora also informed about INDEST *Website* and INDEST User Group as two modes of communication between INDEST and the members. The plans of INDEST to address issues related to usage monitoring, copyright & IPR, active and passive backup and archive development, were highlighted. Expenditure, savings and manpower aspects of INDEST were summarized.

It was clarified in the Workshop that INDEST being quite broad-based, there was enough scope for other bodies to join the consortium. Regarding implementing pay per use, Dr. Arora informed that there was no solution to that direction so far. He also clarified that the scope of getting electronic version of only key journals related to an institute's interest could be explored provided there was substantial number of members, asking for such a facility. It was also clarified that IIT, Bombay had already procured back files of Science Direct and a back up service could be developed based on this product. Procuring *BIS Standards* was on the agenda. Prof. Sirohi, Chairman of the session highlighted that the trend of checking citation counts of ones own publications had just picked up momentum in Indian context.

In his paper on ERIMS Initiative drew the attention of the audience to the fact that way back in 1994, IIMs had formally started need based resource sharing programme. Citing periodical subscriptions as a test case to start the initiative, it was observed that among the (then four) IIMs, 62 per cent of duplications occurred for foreign journals. Also 10 per cent of total subscriptions required 40 per cent of the budget of each library. Thus, librarians' personal attention based, document delivery system of print versions started as an initial effort which gradually led to coming up of IIM Library Consortium, stating its activity with the procurement of just one product in the year 2000. The evolution of ERIMS as a special interest group to take care of e-resource requirements of Indian management schools under INDEST was highlighted and it was mentioned that the initial budget of 4.19 per cent out of INDEST allocation had been raised to about 22 per cent. A statement was presented on the e-resources which had already been made available to the IIMs through INDEST and the resources which had been proposed for IIMs and other Indian management schools for 2003-04.

Ms. Swati Bhattacharya (IIMC) highlighted the need of developing parallel programs by consortia to avoid duplication of procurement of e-resources and to avoid depending on the buying mode only and to provide such information to the users. Two presentations were there from EBSCO (Business Source Premier) and GIST (Ingenta). Mr. M G Sreekumar (IIMK) presented the strategies for digital archives. He highlighted the salient features of IIM Library Consortium and the reason which gave impetus to take up a project on digital archiving. Perpetual access to electronic products was the main concern of the users, the key issues being perpetual access, who does the archiving, how to acquire data and the software solution. Various related issues like longevity and obsolescence of the digital objects, integrity of digital objects, policies regarding access, digital preservation strategies, local and organizational issues, technical criteria and guidelines, structure of retrospective data and archiving content were highlighted.

Prof. Chiranjit Mukhopadhyay (IISc) highlighted additional e-resource requirements of IISc community. Presentation by Prof. P K J Mahapatra on digital library evaluation highlighted the need for user centered perspective of inter and intra-institutional measures of digital libraries and adaptation of various tools for the *purpose. He dwelled upon a tool Lib QUAL+ for* measuring service quality. Quality attributes for service measurement, key attributes of interactivity, criteria for selecting free accessible resources on interest were discussed. A study on electronic access to information resources was referred to indicating the attributes of information resources, information databases, search interfaces, user support service, cost and accessibility of the service. Prof. Mahapatra proposed some new qualitative as well as quantitative characteristics to the evaluation research. In qualitative evaluation, in-person format and online formats were recommended and in the quantitative part, behavioral data and survey were stressed.

Prof. Amar K J R Nayak, XIMB presented the user perspective with respect to the cost, utility, storage and maintenance of e-resources, in the context of his library. He also proposed to widen the connotation of resource sharing activities of the libraries so that benefits could reach the user, irrespective of his/her geographical location.

Dr. Antony Jose, IIM-L deliberated on remote user authentication and access to electronic databases. He explained two more remote authentication and access modes (other than IP authentication and password authentication) for e-resources, viz. *Referrer URL Authentication and Proxy Server.* Ms. Chitra Rao, NITIE, in her presentation on window for ERIMS, proposed several measures to bolster the cooperative activities by the members. Providing a web page for ERIMS, meeting and collective buying by local ERIM members, communication facility among ERIM Members were some of those measures. Three vendor presentations were there by ISI Emerging Markets, Informatics India and Vergis Electronics (LexisNexis).

## Avinashilingam Institute Convocation

The 15th Convocation of the Avinashilingam Institute for Home Science & Higher Education for Women, (Deemed University) Coimbatore was held recently. Dr. E Balaguruswamy Vice Chancellor, Anna University was the Chief Guest of the occasion. "Women's awareness about development is basic to achieving economic empowerment", said Dr. E Balaguruswamy while delivering the convocation address. He noted that even after half a century of independence, 70% of women work force are employed and getting paid only in unskilled jobs. He stressed on the need to provide women with upgraded technical skills, which alone can ensure a quick beginning of the earnings. He also added that the transfer of science and technology to rural women is the need of the hour *because only then optimum use of the vast resources* would be possible. 'Universities', he noted are functioning in isolation from development process and said that sensitizing the students about rural problems is essential and every university should undertake extensive and intensive extension activities to reach out to the rural population. In this context, the Self Help Groups have proved to be immensely useful as it, 'rescues women from distress, ill-treatment, and gives recognition to her for her valuable contribution'. Some of the suggestions that he offered for the improvement of the status of educated women, was special training in unconventional jobs that can be done at home with computers and telephone services and making available special stipends and fellowships. He highlighted the necessity to promote life long learning, inculcation of moral and ethical values and the opportunity for graduate women to use their expertise to affect positive and progressive changes in the society.

Dr. K Kulandaivel, Chancellor in his presidential address recalled the sacrifices of the founder Chancellor, Rev. Ayya Dr. T S Avinashilingam Avargal, the great patriot and educationist, whose noble vision and sustained efforts were nurtured by the first Vice Chancellor and later Chancellor of the University, Dr. Rajammal P Devadas, Highlighting various facilities and comprehensive programmes of the University, he said that the University is marching towards the goal of academic excellence with at present 178 Ph.D and M Phil scholars, 637 postgraduates, 72 PG diploma, 2604 undergraduates, 177 B.Ed and M.Ed students and 931 engineering students. He also elaborated on the university's extensive collaboration with various universities abroad like the University of Manchester and Salford in UK., Universities of Oregon State and Illinois in USA and Royal Melbourne Institute of Technology in Australia and added that the University is proud and happy to have established a close interaction with the Indian Food Park at Virudhunagar, one among the many such extensive collaborative projects undertaken by the University.

Earlier, the Vice Chancellor, Dr. M Chandramani gave the welcome address and presented a report of the achievements and activities of the University. 55 Silver Jubilee medals were awarded and a total of 1378 graduates, consisting of 11 Ph.D, 58 M Phil, 295 postgraduates, 648 undergraduates, 188 B.Ed's, 145 B.E's, 32 PG diploma's and 1 Associate received their degrees at the Convocation. Several dignitaries such as Dr. Mariamma Varghese, University Grants Commission Nominee, Thiru T K Shanmuganandham, President, Sri Avinashilingam Education Trust and

Dr. K Kumaraswamy, Joint Director of Collegiate Education, along with the other members of the Syndicate were present on the occasion.

### Orientation Programme at GNDU

The Academic Staff College, Guru Nanak Dev University, Amritsar organized its 59th Orientation Programme recently. About 17 teachers from different places/colleges of Punjab, M P, Gujarat etc. participated in the Programme. Dr. S K Bhatia, Director, Academic Staff College shared his views with the teacher-participants regarding the need of such orientation programmes which provide them great opportunities to meet, listen and interact with the Resource Persons from different fields. He further added that in the present day world when an explosion of knowledge was taking place in all areas and especially the I.T., it was difficult to keep pace with the ever expanding horizons of new ideas. It was therefore desirable that through such programmes which the UGC had formulated, they not only seek advancement in their careers but also in the areas of interdisciplinary knowledge. A teacher according to him must always remain a student in order to update himself/ herself.

Prof. Pritpal Singh Kapoor, formerly Pro Vice Chancellor, Guru Nanak Dev University in his inaugural address apprised the participants with the system of education and the role of a teacher in the system. He also spoke about the history and culture of Punjab. Dr. D R Vij, a renowned teacher and educationist delivered lectures on teaching, psychology of learners and mental hygiene. Dr. Arun Chopra spoke on the prevention of heart diseases while Dr. Jatinder Mohan spoke upon the stress and its causes. Dr. Deepti Dongaonkar, Professor Obstetrics and Gynaecology, Grant Medical College, Mumbai made presentations on HIV/AIDS and Prevention of Mother to Child Transmission of HIV/ AIDS. Dr. S P Gautam dwelt upon the relevance of research in teaching while Dr. Asha Sethi talked about the power of positive, thinking and creativity. Maj. Gen. B K Bhatia of Delhi spoke on Human Resource Management. Dr. K L Johar, formerly Vice Chancellor, Guru Jambheshwar University, Hisar spoke on higher education. Other topics on which the deliberations were made were — Dr. M P Singh Isher spoke on Drugs, Dr. Satish Verma on Challenges of Higher Education, Dr. Rajneesh Arora on Career Counseling and Placements, Dr. Narpinder Singh on Functional Foods, Dr. Subhash on Communication Skills, Dr. Gurnam Singh on Ethnicity. Dr. Parminder Singh on Human Rights, Dr. Kanwaljit Singh on Computer Services, Dr. Jaspal Singh on Treatment of Backache and Obesity; Dr. K S Duggal on Terms of Journalism. Dr. A K Thukral on Environment Hazards, Dr. H K Puri on Ambedkar and Gandhi, Dr. S S Narang on Indian Political System, Dr. Balwant Singh on Judicial Activism. Dr. Parminder Singh, Professor of Economics, on WTO and Economic Reforms. Dr. Hardeep Singh on Usage of Internet, Dr. Paramjeet Singh on Literature and Society, Dr. Sajjid Hussain on HIV/ AIDS and Dr. R S Bawa, Registrar on Examination System.

### Orientation Programme in Library Sciences

A two-day Orientation Programme in 'Information Explosion and How to Use the Library Effectively' was organized by Tikrikilla College at Tikrikilla recently. Dr. A K Kundu, Deputy Librarian, NEHU, Tura Campus was the resource person. The Coordinator of the Programme in his welcome address highlighted the theme of the programme and stressed the need to use the library more frequently, so that the reading habit is inculcated. The resource person highlighted the magnitude of information explosion, which is beyond imagination. "Unless the students, teachers and educationists keep pace with the explosion, they remain deprived of latest information," he said. He opined that the society moving with the pace of information explosion and integration of new technologies will develop and prosper.

"The invasion of information technology and internet has brought the world very close and it has become a global village. The information is available with us but the need of the hour is to utilize it for day to day development," he said. The deliberations concluded with the resolution to accept the challenges of information explosion and proper utilization of resources for the up-liftment of society and enlightened citizenship.

### Refresher Course in Punjabi

UGC Academic Staff College, Guru Nanak Dev University, Amritsar is going to organize a Refresher Course in Punjabi for College and University teachers from January 02-22, 2004. Candidates interested in attending the Course may submit their application on the prescribed Proforma along with a demand draft of Rs. 500/- as registration fee (non-refundable) in favour of the Registrar, Guru Nanak Dev University, Amritsar payable at Amritsar. For further details contact Dr. S K Bhatia, Director, Academic Staff College, Guru Nanak Dev University, Amritsar, Mobile: 98144-61011

### International Conference on Cultural Heritage and Educational Initiatives

A two-day International Conference on Cultural Heritage and Educational Initiatives is being organized by Rajasthan Council of Educational Administration & Management, Udaipur during 28-29th February 2004 at Darpan Theater, Shilpgram, West Zone Cultural Center, Udaipur. The Conference will be organized under the joint auspices as West Zone Cultural Center (WZCC) and Rajasthan Council of Educational Administration and Management (RCEAM) affiliated to Commonwealth Council of Educational Administration and Management (CCEAM), Academics, teachers, researchers, teacher Educators, Experts and Enthusiastic people from different areas related to Cultural Heritage and Education may attend the Conference.

Last date for submission of abstracts is 31st Dec., 2003 and submission of full paper is 15th January 2004. Interested participants may contact Secretary General, RCEAM, 12-A, Panchwati, Udaipur 313 004 (Raj.). Phone (0294) 2427426, Mobile No.: 9414157857, E-mail: htalesra@rediffmail.com.

# *News from Agricultural Universities*

### Training Programme on Medicinal and Aromatic Plants

A Training Programme on Medicinal and Aromatic Plants was organised recently by CCS Haryana Agricultural University, Hisar. The Programme was sponsored by the National Medicinal Plants Board. Speaking after inaugurating the Programme Shri M.K. Miglani, Vice Chancellor urged the farmers to grow medicinal herbs for better returns. He said that the demand of herbal products was increasing day by day both in the domestic and international market and the farmers should avail this opportunity by growing these herbs. The Vice Chancellor expressed his concern over increasing affiliation of the Indian populace towards the allopathic medicine which he said were known for their deleterious side effects. He said that it was really pitiable that India which had evolved the ayurvedic system of medicine was distracted from the use of herbal medicine whereas, in view of their potency various developed nations were increasingly adopting them. He said that China alone was earning Rs.40 thousand crore from the export of herbs while India which has rich biodiversity was just producing herbs worth Rs.4 thousand crores only.

Shri Miglani further said that in view of the scope of herbs of medicinal value the Haryana Government had taken various initiatives. He said that a 140-acre gerbil garden had been set up at Churgarh in Yamunanagar District where all kinds of herbs were grown for demonstration to the farmers. Besides, the government had also launched other schemes to promote cultivation of medicinal and aromatic plants in the State which include and distribution of seeding material among the farmers. He gave example of certain farmers who were earning good profit out of the cultivation of herbs. He said that the farmers in general were not averse to practice new crops but needed assured marketing of their produce. For this he urged farm experts to lead them way and provide them all technical help.

Speaking on the occasion, Dr. B.S.Dahiya, Director,Research highlighted the research achievements being made in medicinal and aromatic plants in the University. He said that the work on these plants was initiated in 1980 and since then it had developed significant seeding material of various herbs. He claimed that the variety of *mulhethi* developed by it was of highest quality. He said that apart from developed varieties and agronomic practices work was being undertaken to identify the effective chemical ingredient of various herbs and to assess efficacy of certain herbs against harmful crop insects.

Dr. C.S. Tyagi, Head, Medicinal Aromatic and Underutilized plants Section, said that the farmers participating in the week-long training would also be enlightened about the financial support given to the farmers by the National Medicinal Plant Board apart from imparting them practical training on cultivation and marketing of the herbs. He disclosed that the Department had forwarded all projects received so far from the farmers to the National Medicinal Plants Board for sanction of subsidy.

Earlier, Dr. Satyavir, Dean, College of Agriculture in his welcome address, expressed satisfaction over the increasing interest of Haryana farmers in the cultivation of herbs. Dr. R.S. Waldia, Head, Department of Plant Breeding proposed a vote of thanks. ❑

## *COMMUNICATION*

# Teachers on Contractual Appointment: A Critical Evaluation-

Even as the Private Universities Bill, 1997, lies in cold storage, the education sector seems all set for international competition. The controversial proposal to hire university teachers on contract is being mooted just for that.

The prospectus of a Harvard or an MIT at our doorstep may be good news for those hankering for foreign degrees and paying a packet for it, but many feel there will be a big price to pay.

Negotiations at the World Trade Organization are in an advanced stage. USA, the biggest trader of education services, is pushing its proposal, as are over 40 other countries. India is yet to do so.

As for the UGC's proposal education experts feel that any hasty tinkering with the existing system may do more harm than good - a teacher with no long-term stakes in an institution is hardly likely to give of his best to the student or to the university.

'It is indeed said that the proposal for contractual tenure emanates from the Birla Ambani Report, a report which the human Resource Development minister had disowned on the floor of Parliament.

But can't we turn this opportunity to our advantage by developing educational services in a cost-effective manner and exporting them in competition to the developed world?

There are several clauses in the negotiations 'unless they negotiate skillfully we might fall flat on our faces when faced with international competition.

Officials of the Ministry of Human Resource Development and Commerce Ministry say that they are 'fully seized of the imperatives.' A task force has reportedly been set up for this.

## Presumption

UGC's hasty proposal to appoint all university and college teachers in future on contractual basis is based upon three unsubstantiated presumptions.

First, a majority of teachers shirk work, second, security of jobs leads to complacency and results in 'lack of accountability', third, teaching jobs in most countries are on contractual basis which is working very fine in their education systems and therefore ought to work fine here.

All the three presumptions can at best be viewed as working hypotheses which need to be tested in the Indian context. UGC assumes this tendency will be reversed if the appointments are made contractual. It also assumes that complacency is not result of other socio-economic, cultural, structural or academic factors. If these hypotheses were correct, you would expect teachers appointed on ad-hoc basis would be teaching better than their permanent colleagues. You would also expect that teachers appointed on contract in many private institutions would be maintaining a higher standard than permanent appointees in IITs, IIMs, AIIMs, RECs and other government-run education institutions. UGC also seems to believe that if something works fine in the advanced economies of the western countries, the same arrangement would also work fine in the prevailing socio-economic conditions of India.

What is persuading UGC to rush into this decision? It has given merely six months to NIEPA to study the complex issue.

## General Views

Even the Union Human Resource Development Minister Dr. Murli Manohar Joshi is said to be unfavorably disposed to the idea of foreign universities, but as a signatory to the World Trade Organization's General Agreement of Trade in services [which includes education services] it's a *fait accompli.*

Some like former FEDCUTA president Prof. Kapil Kumar oppose the opening upon principle. According to him "We believe that education is for community development not for sale and profit generation". Proponents of free trade are looking for enslavement of the mind.

Prof. D N Rao, who has studied the subject in detail says that the UGC's proposal is motivated by two considerations–falling standards of higher education and the pressure to open up and fall in line with advanced western countries.

But, as Prof. Rao points out the tragedy is that the good ones may not come 'Why should they be interested in providing good education at subsidized rates for your people, they will want to make money.

According to Prof. Rao, "We 'II be swamped by a large number of third rate foreign players leading to the collapse of existing institutions".

'Do we ever use anything to our advantage? We always allow others to take advantage of us', say the sceptics. They warn that in the case of industry and the farm sector there were strong private lobbies at work.

In this case, for the mandarins of the MHRD and the commerce ministry negotiating the deal there are no personal stakes.

Has any university in India produced scholars like economist Amartya Sen or astrophysicist S. Chandrasekhar? Members of the Indian academy find their metier in propaganda and pamphleteering and pomposity. As a result Indian university system nurtures political agitators and trade unionists. Instead of excellence it rewards mediocrity, instead of curiosity conformism. It is a factory that churns out second grade graduates. Coming back to the question of contractual appointment. There is no doubt that this recommendations may prove to be fruitful, and if it happens it will add meritocracy and put an end to the activism that has diminished academic excellence and rendered Indian universities impotent.

## The Questions Raised

The notion that teachers shirk work has been propagated without any objective data. Is the proportion of teachers shirking work significant? Is it equally prevalent in the central and state universities? Is there any regional variation in this tendency? UGC has no basis in claiming that the percentage of the so called shirkers [likely to be less than 15-20 per cent] would be reduced if all teachers are placed on contract.

Following question may be raised by an intellectual at the proposal of UGC,

- Is there any reliable scientific study which establishes that job security is mainly responsible for the 'complacency'?
- Unexposed to the competition will our universities be able to compete globally?
- Can JNU and Vishwa Bharti also reach Newyork and Washington ?
- Will the IITs and IIMs admit foreigners at the cost of the Indian students?
- Will foreign universities be affordable for all Indian students or just reachable?
- Will the UGC and AICTE be able to ensure that students don't end up paying for worthless foreign degrees and diplomas?
- Foreign players could demand a level playing field will it be the end of educational subsidies?
- Won't foreign universities change the complexion of Indian education?

## Position in America

All junior teaching positions–Assistant Professors and Associate Professors are contractual. They have yearly contracts and are expected to teach for nine months for the last three months they can do an additional assignment such as a summer job.

The session begins in August. Unlike the British system which India follows, the emphasis in American universities is on research rather than teaching. By December, there is scramble for publications. This is known as perish or publish syndrome. The more research papers you have on your credit the higher you are rated. But as in India, a lot of trash also gets published mainly to add to the numbers. This increases your stock when you apply in Feb-March for renewal of contract for the next academic year.

Only senior and distinguished professors are given tenurial or permanent positions.

## Suggestions

As UGC Chairman Prof. Arun Nigavekar bluntly put it: 'we can't bury our heads in the sand like ostriches. Once these universities come they will bring their work culture and appoint teachers on contractual basis. We might as well introduce such a system for our teachers in advance.'

The country has a right to know that the issue of teachers' appointment on contract has long been on the agenda of IMF and World Bank.

the agenda of IMF and World Bank.

This is why lakhs of para teachers have been recently appointed on contract and low wages to teach poor children in various states. UGC is ready to take a similar decision while the 'para-teacher phenomenon' is still a raging controversy in school education. Clearly, UGC is rushing not in the national interest but only to fulfill the dictates of the structural Adjustment Programme imposed by IMF and the World Bank. This needs to be resisted to ensure that future generations are not adversely affected.

(1) UGC should stipulate that at the end of the contractual period university teachers should show a substantial body of research and be rated by the students on there teaching proficiency.

(2) UGC must make a Judgement on whether the teacher should be granted a permanent appointment.

(3) It is important to review the structure and function of UGC itself. By and large it is a hand maiden of the political establishment.

(4) UGC needs like the election commission, to be rendered autonomous by an act of parliament. It's charter should be reviewed such that members can be inducted world wide, among Indians as well as international scholars.

In the Indian diaspora alone there are men and women of global calibre, who would be delighted to serve their country. The current obsession with the economic reforms is blinkered. To make the Indian economy globally competitive, reforms have to extend very deep and wide in to society, and that includes the university system. The fact is Indian universities are hopelessly out of step with the world. My sympathies lie squarely with Indian youth, who are subject to the wind of agitation who pose as a teacher. ☐

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# THESES OF THE MONTH

## A list of doctoral theses accepted by Indian Universities
## (Notifications received in AIU during August-September, 2003)

### HUMANITIES

**Fine Arts**

*Drama*

1. Kulkarni, Hemant V. **Marathi boshi rangbhumivareel digdarshkachya karyacha sampreshnatmak drishtikonatoon abhyas.** (Dr L N Deshpande), Department of Dramatics, Yashwantrao Chavan Maharashtra Open University, Nashik.

*Music*

1. Anuradha, A. **Group Kriti-S in Telugu after Tyagaraja: An analytical and comparative study of them with his Kriti-S.** (Prof Gowri Rammohan), Department of Music, Andhra University, Waltair.

2. Dhori, Hanumanna Saibanna. **Hyderabad Karnatakadalli Janapada sangeeta: Ondu adhyayana.** (Dr Kamala Purandare), Department of Music, Karnatak University, Dharwad.

3. Kalpana Kumari. **Himachal Pradesh ke Shimla, Solan, Mandi va Kullu Jile ke lok sangit mein laya tatha tal ka vivechanatmak adhyayan.** Department of Music, Himachal Pradesh University, Shimla.

**Geography**

1. Anjaneyulu, R. **Electricity resource development in Andhra Pradesh: A geographical analysis.** (Prof A Kamalakar), Department of Geography, Osmania University, Hyderabad.

2. Bidikar, Abdulwahab Sayyadsab. **Spatial analysis of market centres in drought prone areas: A case study of Bijapur District.** (Dr S I Hugar), Department of Geogrpahy, Karnatak University, Dharwad.

3. Chinnappanavar, Shivanand Chinnappa. **Utility pattern, conservation and management of water resources in Belgaum District: A geographical analysis.** (Dr S R Patil), Department of Geography, Karnatak University, Dharwad.

4. Narinder Kumar. **Diversification of rural non-farm employment in Haryana, 1971-91: Geographical analysis.** (Dr Dhian Kaur), Department of Geography, Panjab University, Chandigarh.

5. Sri Kumar. **Evolution and types of rural settlement in Murliganj C D Block.** (Dr Shio Muni Yadav), Department of Geography, Bhupendra Narayan Mandal University, Madhipura.

**History**

1. Bharathi, B R. **Rashtrakuta inscriptions: A cultural study.** (Dr Deverakonda Reddy), Department of Epigraphy, Kannada University, Hampi.

2. Bhaskar Rao, R. **A historical study of prescribed Telugu writings during freedom movement, 1900-1947.** (Prof A Bobbili), Department of History, Kakatiya University, Warangal.

3. Kharel, Mohan Prasad. **Socio-economic conditions of Sikkim under colonial domination, 1889-1947: An authenticity discourse.** (Prof T K Roy Choudhury), Department of History, University of North Bengal, Raja Rammohunpur, Distt Darjeeling.

4. Lamb, Vyankat Bajrang. **Peshwakaleen nyayavyavastha: Ek chikitsak abhyas.** (Dr B S Deshpande), Department of History, Dr Babasaheb Ambedkar Marathwada University, Aurangabad.

5. Lande, Tryambak Ramrao. **Shahji Maharaj: Ek chikitsak abhyas.** (Dr B S Deshpande), Department of History, Dr Babasaheb Ambedkar Marathwada University, Aurangabad.

6. Lodwal, Hemant. **Dewas Jile ka puratatva: Ek samalochanatmak adhyayan, lagbhag 600 isvi purva se 1300 isvi tak.** (Prof Rehman Ali), Department of History, Vikram University, Ujjain.

7. Mahesh, K. **Krishnadevarayana kalada Vaishnava devalayagalu.** (Dr K M Suresh), Department of Epigraphy, Kannada University, Hampi.

8. Rao, Parimala V. **The emergence of the concept of Hindu rashtra in the nineteenth century Maharashtra.** (Prof K N Panikkar), Centre for Historical Studies, Jawaharlal Nehru University, New Delhi.

9. Ratnam, N Kanaka. **Kakatiya polity.** (Dr Syed Ayub Ali), Department of History, Kakatiya University, Warangal

10. Rikam, N T. **Changing religious identities of Arunachal Pradesh: A case study of the Nyishi since 1947.** (Dr J L Dawar), Department of History, Arunachal University, Itanagar.

11. Samba Murthy, B. **Nature of the leadership of Telangana peasant armed struggle 1945-51 : A study.** (Prof A Bobbili), Department of History, Kakatiya University, Warangal

12. Satapathy, Samikshya **Orissa in the nineteenth century: A study of social cultural history.** (Dr D Kahn), Department of History, Sambalpur University, Jyoti Vihar, Burla

13. Satbhai, Shriniwas Govindrao **Nagpurkar Bhosalyancha Rajkarnat British Residentanchi bhumika. isa 1803 te 1854.** (Dr B R Andhare), Department of History, Nagpur University, Nagpur.

14. Shantibala Devi, Keisham. **The traditional costume of the Zeliangrong Tribes: A study of ethno-asthetic history.** (Dr L Kunjeswori Devi), Department of History, Manipur University, Imphal

15. Siddiqui, Farhat Tabassum Mumtazuddin **Deoband: Ulema's movement for the freedom of India.** (Dr Mirza Mohd Khizar), Department of History, Dr Babasaheb Ambedkar Marathwada University, Aurangabad.

16. Singh, Mamta. **Vaishnav dharam ka lokikikaran sameekshatmak adhyayan: Pauranik sahitya ke vishesh sandarbh mein.** (Dr Mastram Singh), Department of Ancient Indian History, Culture and Archaeology, Vikram University, Ujjain

17. Surendra Kumar. **Prachin Bhartiya vyapar evam tajjanit samasyayon ka adhyayan, chhati shatabadi isa poorva se 200 isa poorva tak.** (Dr Surendra Singh), Department of History, Babasaheb Bhimrao Ambedkar Bihar University, Muzaffarpur.

18. Swarupa, K. **Social life under the Kakatiyas.** (Prof P Hymavathy), Department of History, Kakatiya University, Warangal.

**Languages & Literature**

*Arabic*

1. Mohammed Siraj Ahmed. **Arabic tafseer in modern period.** (Prof Qamarunnisa Begum), Department of Arabic, Osmania University, Hyderabad.

*Bengali*

1. Ghosh, Brindaban. **Bangla natyake Ramanarayan**

**Tarkaratnar abodan.** (Prof Ankush Bhatta), Department of Bengali, University of North Bengal, Raja Rammohunpur, Distt Darjeeling.

*English*

1. Al Shami Ismaeel Saleem Mohamed. **Critiquing the feminine lore: A study of Angela Carter's novels.** (Dr A G Khan), Department of English, Dr Babasaheb Ambedkar Marathwada University, Aurangabad.

2. Bhowmick, Dhira. **Writing the other: A study of race, *gender and marginality in Toni Morrison's fiction.*** (Prof K C Baral and Dr C K Naik), Department of English, North Eastern Hill University, Shillong.

3. Datta, Poonam. **Imaging India in British Indian writings between 1914-1945.** Department of English, Kurukshetra University, Kurukshetra.

4. Deshmukh, Nanda Chandrarao. **Overlapping values of life and art: A study of Willa Cather's fiction.** (Dr A G Khan), Department of English, Dr Babasaheb Ambedkar Marathwada University, Aurangabad.

5 Donavalli, Uma Rani. **Social concerns and moral *imperatives in Arthur Miller's playwriting: A select study.*** (Prof R Saraswathi), Department of English, Nagarjuna University, Nagarjuna Nagar.

6. Gambhir Singh, Irom. **The power and politics of English in North East India: A socio-padagogic study.** (Dr K S Aggarwal), Department of English, Manipur University, Imphal.

7. Girija Bai, G. **Narrative art in detective and spy stories: A study of P D James and John Le Carre.** (Dr A Subba Rao), Department of English, Osmania University, Hyderabad.

8 Guduru, Manoja Narayanaswd. **The concept of individualism in the novels of Ayn Rand.** (Dr V T Giridhari), Department of English, Swami Ramanand Teerth Marathwada University, Nanded.

9 Jacob George, C. **The cartography of the fantastic: The actualization of fictional worlds in Issac Asimov's Foundation novels and Frank Herberts Dune novels.** (Dr T M Gopinatha Karup), Department of English, University of Kerala, Thiruvananthapuram.

10 Mallesham, B. ***The city in the novels of William Kennedy: A critical study.*** (Prof Siddiq Ali). Department of English, Osmania University, Hyderabad

11 Manleen Kaur. **The semiotics of conceptual structures in the writings of Anita Desai with special reference to Cry, the Peacock.** (Prof H C Narang), Centre of Linguistics and English, Jawaharlal Nehru University, New Delhi.

12 Mehta, Navin Kumar. **The concept of spirituality in Indo-Anglian fiction.** (Dr Achala Sharma), Department of English, Vikram University, Ujjain.

13. Rajamouly, K. **Time in the poetry of Philip Larkin.** (Prof D Rama Krishna), Department of English, Kakatiya University, Warangal.

14. Ray, Anandamay. ***Poets of childhood: A study of*** **William Blake and Rabindranath Tagore.** (Prof B K Banerjee), Department of English, University of North Bengal, Raja Rammohunpur, Distt Darjeeling.

15. Riki Devi, Lourembam. **The dynamics of tragedy in the plays of Arthur Miller.** (Prof N Khagendra Singh), Department of English, Manipur University, Imphal.

16. Saviour Das, B. **Drama as text and performance in Vijay Tendulkar and Girish Karnad.** (Dr B Chandrika), Department of English, University of Kerala, Thiruvananthapuram.

17. Sheela, N. **A quest for self perception: Alienation, betrayal and guilt in the novels of Ngugi Thiong 'O'.** (Dr V Syamala). Department of English, University of Kerala, Thiruvananthapuram.

18. Singh, Latika. **Coleridge's theory and Wordsworth's *poetry: An analysis in the perspective of the Indian theory* of knowledge.** (Prof Kapil Kapoor), Centre of Linguistics and English, Jawaharlal Nehru University, New Delhi.

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*Hindi*

1. Anil Kumar. **Makhan Lal Chaturvedi ke kavya mein saundarya aur prem nirupan.** (Dr S N Sharma), Department of Hindi, Maharshi Dayanand University, Rohtak.

2. Chaturvedi, Rameshchandra. **Beesvin sadi kee Hindi dalit kavita.** (Dr Premlata Chutail), Department of Hindi, Vikram University, Ujjain.

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4. Dhaka, Namita. **Swachhandatamulak pravrittiyon *kee drishti se Ashtchhap kavya ka mulyankan.*** Department of Hindi, Kurukshetra University, Kurukshetra.

5. Dubey, Anilkumar Rampal. ***Shri Lal Shukla ke upanyas*** **sahitya kaanusheelan.** (Dr S P Mishra), Department of Hindi, NagpurUniversity, Nagpur.

6. Goel, Deepika. **Ahmadbaksh Thanesari krit Ramayan tatha Arya Sangeet Ramayan ka tulanatmak adhyayan.** (Dr Pruan Chand Sharma), Department of Hindi, Maharshi Dayanand University, Rohtak

7. Gorai, Kalkoli. **Dasven dashak ke mahila upanyaskaron ke upanyason mein nari sangharsh ka swarup.** (Dr M Upadhyay), Department of Hindi, Vinoba Bhave University, Hazaribag.

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9. Gupta Thakur, Abha. **Samaya ke nikash per Mohan Rakesh ke natak.** Department of Hindi, Maharaja Sayajirao University of Baroda, Vadodara.

10. Gupta, Usha. **Sathottari Hindi gramgandhi kahaniyon ka ek adhyayan: Bihar ke kahanikaron ke sandarbh mein.** (Dr C Karn), Department of Hindi, Vinoba Bhave University, Hazaribag.

11. Jagdish Chandra. **Bhakti sahitya mein shoshit kee chetana: Ek vishelshan.** (Dr Saroj Pande), Department of Hindi, Osmania University, Hyderabad.

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13. Jivrag, Shilpa Dadarao. **Sarveshwardayal Saxena ka natya sahitya: Samvedana aur rangshilpa.** (Dr Rajkumari Gadkar), Department of Hindi, Dr Babasaheb Ambedkar Marathwada University, Aurangabad.

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15. Kapoor, Swati. **Agyeya ke katha sahitya mein vyakti swatantrya kee avadharana.** (Dr D P Gupt). Department of Hindi, Jamia Millia Islamia. New Delhi.

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18. Md Aleemullah. **Hindi Sufi premakhyan kavya mein Islami tatva.** (Dr Majida Asad), Department of Hindi, Jamia Millia Islamia, New Delhi.

19. More, Rajshree P. **Uttarshati ke Hindi upanyason mein Rajneta ka badalta rup.** (Prof Lila Jyothi), Department of Hindi, Osmania University, Hyderabad.

20. Navsagre, Sujata Sugrive. **Acharya Hazari Prasad Dwivedi ke upanyason mein sanskritik chetana.** (Dr Shobha Deshpande), Department of Hindi, Swami Ramanand Teerth Marathwada University, Nanded.

21. Pandey, Mainejar Nath. **Nagarjun ke upanyas: Charitra aur shilpa vidhan.** (Dr Digamber Pandey), Department of Hindi, Vinoba Bhave University, Hazaribag.

22. Pandey, Uday Kumar. **Mohan Rakesh ka katha sahitya aur nari purush sambandh.** (Dr Digambar Pandey), Department of Hindi, Vinoba Bhave University, Hazaribag.

23. Punam Bala. **Parsad ke natak: Rashtriya pariprekeshya.** (Dr Vidya Siwach), Department of Hindi, Maharshi Dayanand University, Rohtak.

24. Pushpinder ~~Kaur~~ **Amrit Lal Nagar ke upanyason mein nari patron ka samaj shastriya drishti se adhyayan.** (Dr Laxmi Narain Sharma), Department of Hindi, Panjab University, Chandigarh.

25. Rahiman, M F. **Social consciousness depicted in the fiction writings of Raja Radhika Raman Prasad Singh.** (Prof S M Iqbal), Department of Hindi, Andhra University, Waltair.

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34. Sharma, Manjula. **Samkaleen Hindi kavita mein nihit vidroh chetana ka vishleshnatmak addyayan.** (Dr Durga Prasad Gupt), Department of Hindi, Jamia Millia Islamia, New Delhi.

35. Sharma, Radha Ballabh. **Sant sahitya mein samajik aur sanskritik samanvya.** *D. Litt.* Department of Hindi, Awadhesh Pratap Singh University, Rewa.

36. Singh, Nidhi. **Hindi upanyason mein sanskritik mulya: Premchand aur Hazari Prasad Dwivedi ke vishesh sandarbh mein.** (Dr B S Sikarwar), Department of Hindi, Jiwaji University, Gwalior.

37. Singh, Rupa. **Istri asmita kee talash Krishna Sobti ke katha sahitya ke sandarbh mein.** (Prof Manager Pandey), Centre of Indian Languages, Jawaharlal Nehru University, New Delhi.

38. Singh, Sadhana Jagatnarayan. **Dharamvir Bharati ka gadya sahitya, katha sahitya ko chhorh kar.** (Dr Shakuntala Panchal), Department of Hindi, Dr Babasaheb Ambedkar Marathwada University, Aurangabad.

39. Singh, Suraksha. **Yashpal ke nibandhon mein jeewan darshan.** Department of Hindi, Kurukshetra University, Kurukshetra.

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44. Tiwari, Pravesh Kumar. **Beeswin sadi ke antim do dashakon mein badalte jeewan sandarbhon ke pariprekshya mein Hindi upanyason ka anusheelan.** (Dr Sewa Ram Tripathi), Department of Hindi, Awadhesh Pratap Singh University, Rewa.

45. Vyas, Lata Ghanshyam. **Swatantrayottar kaleen Hindi ke pramukh sameekshakon ka Hindi sameeksha ko yogdan: Vikasatmak dristikon se.** (Dr Ghanshyam Vyas), Department of Hindi, Nagpur University, Nagpur.

46. Yash Pal. **Kabir aur Tulsi sahitya mein nihit warn vyavastha sambandhi drishti ka tulanatmak adhyayan.** (Dr Krishan Kumar Kaushik), Department of Hindi, Jamia Millia Islamia, New Delhi.

47. Yerekar, Pratibha Gangadhar. **Mohan Rakesh ke natakon mein nari charitra.** (Dr Kamalakar Gangawane), Department of Hindi, Dr Babasaheb Ambedkar Marathwada University, Aurangabad.

*Kannada*

1. Devendrappa, J. **Andhra Karnataka gadi pradeshada stalanamagalu.** (Dr D Panduranga Babu), Department of Kannada, Kannada University, Hampi.

2. Hegde, Shridhar Venkataraman. **Adhunik Kannada mahakavyagalu: Ondu adhyayana.** (Dr V B Rajur), Department of Kannada, Karnatak University, Dharwad.

3. Hiramath, Sarojini Chinnayya. **Dr Guruling Kapase: Baduku baraha.** (Dr Channakka Pavate), Department of Kannada, Karnatak University, Dharwad.

4. Kale, Guru Shankrappa. **A linguistic analysis of the stories of Devanur Mahadeva.** (Dr K Anban), Department of Linguistics, Karnatak University, Dharwad.

5. Mulge, Ramesh. **Hyderabad Veerashaiva matagalu: Ondu adhyayana.** (Dr V S Badigera), Department of Kannada, Kannada University, Hampi.

6. Nagabhushana, K. **Vachanakarara shabda mattu artha meemamse.** (Prof Mallepuram G Venkatesh), Department of Kannada, Kannada University, Hampi.

7. Natikar, Subhaschandra Lakkanna. **Karnatakadalli Sidi Sampradaya: Ondu adhyayana.** (Dr Sarojini Chawalar), Department of Kannada, Karnatak University, Dharwad.

8 Pujar, Parwatewwa Veerappa. **Dana Chinthamni attimabbe.** (Dr D V Paramashiva Murthy), Department of Kannada, Kannada University, Hampi.

9. Pushpa, H L. **Swatantrottara Kannada natakagalalli deha mattu manassugala sambhandha.** (Prof C G Krishnaswamy), Department of Kannada, Kannada University, Hampi

10 Rama, R T. **Kannada natakagalalli sthree *pathradarigalu.*** *(Dr K P Bhat), Department of* Kannada, Bangalore University, Bangalore

11 *Siddappa, N Nagappa.* ***Kannada grantha sampadanege*** **Dr R C Hiremathara koduge.** (Dr S V Ayyanagoudar), Department of Kannada, Karnatak University, Dharwad.

12 Ukkali, Drakshayani Mahadevappa. **V A Sanadi: Samagra adhyayana.** (Dr Dastgir Allibhai), Department of Kannada, Karnatak University, Dharwad

13. Yallatti, Suresh Kadappa. **Devanur Mahadevara kadambarigalu: Ondu adhyayana.** (Dr S S Bhadrapur), Department of Kannada, Karnatak University, Dharwad

*Marathi*

1 Dahat, Ratnakar Ramaji. **Patratmak Marathi *kadambari, 1930 te 1990: Sanshodhan ani sameeksha.*** (Dr D B Kulkarni), Department of Marathi, Nagpur University, Nagpur.

2 *Ghodke, Sunita Dinkarrao.* ***Nirmala Deshpande: Vyakti*** **ani vangmay.** (Dr P S Galegaonkar), Department of Marathi, Swami Ramanand Teerth Marathwada University, Nanded

3 Gohokar, Vidya Ramesh. **Sant Tukaram-Samrath Ramdas yanchya bhakti sampradayateel samaj karyacha taulnik chikitsak abhyas.** (Dr Ram Ghore), Department of Marathi, Nagpur University, Nagpur.

4 Jadhav, Suvarna Govindrao. **Lokgeetatoon abhivyakta honare istri jeewan: Nilanga Taluka.** (Dr Sudam Jadhav), Department of Marathi, Dr Babasaheb Ambedkar Marathwada University, Aurangabad.

5 Wanode, Gangadhar Deoraoji. **A linguistic study of Watankari language of Gadchiroli District.** (Dr R P Saxena), Department of Linguistics, Nagpur University, Nagpur

*Nepali*

1 Dahal, Raj Kumari. **Nepali anchalik upanasko bishlesanatamak adhyayan ka mulyankan.** (Prof B K Upadhaya), Department of Nepali, University of North Bengal, Raja *Rammohunpur, Distt Darjeeling*

*Oriya*

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2. Pradhan, Manabhanjan. **Grama debata samparkita lokakatha o lokasangeeta. Borasambara anchalara 100 ti grama adharare.** (Dr K R Panigrahi), Department of Oriya, Sambalpur University, Jyoti Vihar, Burla.

3. Tiwari, Kameshwar. **Yugin sandarbh mein Ballia Janpad ke lokgeeton ka parisheelan.** (Dr S K Nayak), *Department of Oriya, Sambalpur University, Jyoti Vihar, Burla.*

*Persian*

1. Koshanpur, Abdul Samad. **Chashem andazi dar adabyat-e-dari Saddah-e-Sizdahum.** (Dr Mohammad Iqbal), Department of Persian, Jamia Millia Islamia, New Delhi.

*Punjabi*

1. Amarjit Kaur. **Gurdial Singh de navalan vich sabhiachark avchetan.** (Dr Shinder Pal Singh), Department of Punjabi, Panjab University, Chandigarh.

2. *Darshan Singh.* **Gurbaksh Singh *Preetlari dee kahani* kala.** (Prof Raghbir Singh), Department of Punjabi Panjab University, Chandigarh.

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1. Babita. **Aitareya Brahmana ke kriyapadon ka bhashik adhyayana.** Department of Sanskrit, Kurukshetra University, Kurukshetra.

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3. Chaudhary, Pratibha. **Pandita Madhusudana Ojha krta Indravijaya ke vishesha sandarbha mein pragaitihasika Bharatavarsha ka bhaugolika, aitihasika evam vaijnanika vivechna.** (Dr Shankarji Jha), Department of Sanskrit, Panjab University, Chandigarh.

4. Chhabra, Meena. **Pauranika samaja vyavastha: Eka adhyayana Vishnu tatha Bhagavata puranon ke sandarbh mein.** (Dr Dhanraj Sharma and Dr Vikram Kumar), Department of Sanskrit, Panjab University, Chandigarh.

5. Choudhary, Padmanand. **Alankarkaustubh ka sameekshatmak adhyayan.** (Dr Shobha Kant Jaidev Jha), Department of Sanskrit, Kameshwar Singh Darbhanga Sanskrit University, Darbhanga.

6. Datt, Uma. **Shri Mathura Parsada Dikshita ke natakon mein rashtriya chetana.** (Prof V P Upadhyaya), Department of Sanskrit, Panjab University, Chandigarh.

7. Jha, Anand. **Shrimad Bhagwat Mahapuran mein varnit kavya saundraya ka sameekshatmak adhyayan.** (Dr Shivakant Mishra), Department of Sanskrit, Bhupendra Narayan Mandal University, Madhipura.

8. Jha, Trilochan. **Saidhantik drishtya Avayayi Bhavant Prodh, Manorama, Laghu Shabdendu Shekharyo stulanatmak madhyayanam.** (Dr Veer Chandar Rai), Department of Sanskrit, Kameshwar Singh Darbhanga Sanskrit University, Darbhanga.

9. Mahapatra, Ajay Kumar. **Vaiyakaranbhushan sar vyakhyo darpantatvadarshinayo sameekshatmak adhyayanam.** (Dr K V Somayajulu), Department of Vyakaran, Rashtriya Sanskrit Sansthan, Janak Puri, New Delhi.

10. Mishra, Arjun. **Bhartiya Jyotish mein M M Hemadgad Thakur kee bhumika.** (Dr Radha Kant Mishra), Department of Sanskrit, Kameshwar Singh Darbhanga Sanskrit University, Darbhanga.

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12. Nainsa. **Dr Rewaprasada Dwivedi krta Sitacaritam Mahakavya: Eka sameeksatmaka adhyayana.** Department of Sanskrit, Kurukshetra University, Kurukshetra.

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21. Verma, Soni. **Mahabharat ke Sabhaparva ka sanskritik sameekshan.** (Dr R L Mishra), Department of Sanskrit, Vinoba Bhave University, Hazaribag.

### *Telugu*

1. Anjani Devi, D. **Sammakka Saralamma Jatara: Sahitya samskritika amsalu.** (Prof B Rukmini), Department of Telugu, Kakatiya University, Warangal.

2. Lakshmi Devi, V V. **Satyaanveshi Chalam: Oka pariseelana.** (Dr E Viswanadha Reddy), Department of Telugu, Andhra University, Waltair.

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4. Narasimha Murthy, S Venkata Lakshmi. **Atreya natakalu: Oka sameeksha.** (Dr S G Ramanujacharyulu), Department of Telugu, Osmania University, Hyderabad.

5. Rama Rao, V Venkata. **Swarganiki Nitchenalu maruthunna samajamlo saswatha mulyalu.** (Prof Kovela Suprasanna Charya), Department of Telugu, Kakatiya University, Warangal.

6. Rambabu, B. **Ghandikota Brahmaji Raogari navalalu - parisheelana.** (Dr G Yohan Babu), Department of Telugu, Andhra University, Waltair.

### Philosophy

1. Chourasia, Rakesh Kumar. **Sanatam Dharam, Hindu Muslim ekta aur Gandhi: Ek darshanik sameekhsa.** (Dr N K Ambastha), Department of Philosophy, Vinoba Bhave University, Hazaribag.

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### Religion

1. Mohd Arshad. **Maghrib Awr Islamic buniyad parasti: Chand aham maghribi mufakkirin ke afkar-o-khayalat ka tajziyati mutalah.** (Prof Akhtarul Wasey), Department of Islamic Studies, Jamia Millia Islamia, New Delhi. ❑

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The February 16, 2004 (Vol 42, No. 7) issue of the University News to be brought out on the occasion of XVI New Delhi World Book Fair will be a Special Number on 'Private Participation in Indian Higher Education: Contemporary Issues and Challenges'. The sub-themes identified for the issue are :

- Access and Quality in the Context of Private Participation;
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The issue will contain articles contributed by Senior Academics from different parts of the World. Readers of the University News are also invited to contribute to the Special Number by submitting papers/articles on above theme and sub-themes by **December 30, 2003**. The papers will be published in the special issue subject to the approval of the Editorial Committee of the University News. The authors may follow the following guidelines for submitting the articles -

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| Assistant Professor | - | - | - | - | 1 | 1 |
| 3. Dept. of Law: | | | | | | |
| Assistant Professor | | - | - | 1* | - | 1 |
| 4. Dept. of Social Work: | | | | | | |
| Assistant Professor | | 1* | - | 1* | - | 2 |
| **Group II - Sciences** | | | | | | |
| 5 Dept. of Applied Mathematics: | | | | | | |
| Assistant Professor | | 1* | - | - | - | 1 |
| 6 Dept. of Computer Science | | | | | | |
| Associate Professor | | 1*@ | - | - | - | 1 |
| Assistant Professor | - | | - | 1* | - | 1 |
| 7. Dept. of Human Development & Family Studies: | | | | | | |
| Assistant Professor | - | - | - | 1* | - | 1 |
| **Group III-Engineering & Technology** | | | | | | |
| 8 Institute of Pharmaceutical Technology | | | | | | |
| Professor | | - | - | - | 1 | 1 |
| Associate Professor | | - | 1(BC-A) | - | - | 1 |
| Assistant Professor | | - | - | 1* | - | 1 |

(*) ST/PHC Backlog Vacancies

@ Subject to results of WP. No. 18673/93 filed in the High court.

(**) If no suitable candidate is available for Professor's post, an Associate Professor under OC category will be considered against it.

The Rule of Reservation for the posts of Associate Professor/ Assistant Professor for SC/ST/BC/PHCs is followed as per the Government orders from time to time in filling up of the vacancies.

Note: If an eligible candidate of Scheduled Caste-B/BC-A is not available, the roster point will be filled by a candidate of Scheduled Caste-C/BC-B and so on and so forth.

**Scale of Pay:**

| | | |
|---|---|---|
| Professor | - | 16400-450-20900-500-22400 |
| Associate Professor | - | 12000-420-18300 |
| Assistant Professor | - | 8000-275-13500 |

**Important Note:** The candidates who are appointed through this advertisement will not be eligible for pensionary benefits.

The prescribed application form, in duplicate and other information like qualifications, specializations etc., will be supplied on or after **12-11-2003** on payment of **Rs.400/-** for all categories **(Rs.300/- for SCs/STs)** towards application cum-registration fee, by a **crossed demand draft drawn on or after 10.11.2003** on any Scheduled Bank in favour of the **Registrar, Sri Padmavati Mahila Visvavidyalayam, Tirupati, payable at Tirupati**.

The application forms and information to candidates will be issued on receipt of requisition from the candidates on plain white paper, mentioning the advertisement No. and the post, accompanied by a self addressed envelope of the size 27 cm x 12 cm duly affixing postage stamps worth Rs. 32.00 if the application is required by post.

The University will not be responsible for any loss or delay in transit of the applications sent by the candidates. Applications received after due date will not be entertained.

The University reserves the right to fill up any or all the above posts, if necessary. When called for interview, the candidates will have to travel at their own cost. Canvassing in any form will be considered as a disqualification.

Those who wish to apply for more than one post should submit filled-in applications separately for each post along with the prescribed fee for each post.

Tirupati
Dt. 10-11-2003

**Prof. P. Murali Mohan**
REGISTRAR I/c

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## MAR ATHANASIUS COLLEGE OF ENGINEERING

### KOTHAMANGALAM, KERALA (686 666)

### (GOVERNMENT AIDED INSTITUTION)

Applications are invited for the permanent, temporary and anticipated vacancies in Mar Athanasius College of Engineering, Kothamangalam.

| | | | |
|---|---|---|---|
| 1. | Professor | Department of Master of Computer Applications | 1 No |
| 2 | Assistant Professor | " | 2 Nos |
| 3. | System Administrator | " | 1 No |
| 4. | Lecturer | " | 3 Nos |
| 5. | Tradesman | " | 1 No |
| 6 | Tradesman in Foundry Section | Mechanical Engineering | 1 No |
| 7. | Tradesman | Civil Engg. (Temporary) | 1 No |
| 8. | Lecturer | Mechanical Engg. (Anticipated) | 1 No |
| 9. | Lecturer | Electrical and Electronics Engineering (Anticipated) | 1 No. |

Qualifications, scale of pay and age will be as per the norms prescribed by the A.I.C.T.E., M.G.Uty., K.P.S.C. and Kerala Govt.

Application form and other details can be had from the Principal, Mar Athanasius College of Engineering, Kothamangalam (686 666) Kerala on payment of **Rs. 100/-** in person or by **D.D. drawn in the name of the Secretary, Mar Athanasius College Association, Kothamangalam** with a self addressed envelope 23 x 10 cm. affixing Postal Stamp worth Rs. 22/- for registered post for the post of teaching staff. (For the post of Tradesman Rs. 50/- as the cost of application form). Filled up applications should reach the Secretary, Mar Athanasius College Association, Kothamangalam **within 30 days** of the date of publication of the advertisement.

Kothamangalam
25-10-2003

SECRETARY

# Indian Institute of Technology Roorkee

## FOUNDATION DAY AND ALUMNI DAY, 25 November 2003

IIT Roorkee welcomes **Shri R.K. Singh**, IRSE, Chairman Railway Board and Ex Officio Principal Secretary to Government of India, Chief Guest at the Foundation Day Function, **Shri Pradip Baijal**, Chairman, Telecom Regulatory Authority of India & President Thomason Alumni Association IIT Roorkee, Diamond Jubilee, Golden Jubilee, Silver Jubilee and other visiting alumni on the Foundation and Alumni Day.

**The Past:** Known as the University of Roorkee until Sept. 2001, IIT Roorkee has many firsts to its credit. When established as Roorkee College in 1847, it was the first ever Engineering College of the British empire. In 1854, it was renamed as Thomason College of Civil Engineering. In 1949, it was elevated to become the first engineering University of India. 52 years later, it became the first technical institution to be converted to an IIT.

Its faculty has been graced with 8 Padma awards (Padma Vibhushan, Padma Bhushan and Padma Shri); 9 Bhatnagar awards and 5 international academic awards. Its 12 faculty members have held high positions of Governor/ DG CSIR/ Secretary GOI/ Chairman AICTE etc, 18 became Director of IITs/ Vice-Chancellors/ Directors of R & D institutes while 25 were honoured with Fellowship of National Academies (INSA, INAE).

**The Present:** IIT Roorkee offers undergraduate, postgraduate and doctoral programme in 9 branches of engineering: **Chemical, Civil, Computer Science, Electrical, Electronics & Communication, Production & Industrial, Mechanical, Metallurgical & Materials and Pulp & Paper**.

Besides, it offers postgraduate and doctoral programme in 4 other branches of engineering, where undergraduate programme are not available: **Earthquake, Hydrology, Water Resources Development and Alternate Hydro Energy**. UG, PG and Doctoral programme are also offered in **Architecture & Planning**.

Other programme offered at postgraduate level in **Physics, Chemistry, Mathematics, Earth Sciences, Biotechnology, Business Administration and Computer Applications** make the total number of available PG programmes as 55, which is the largest offered by any technical institution in the country.

The institute is residential with a student population of nearly 3400 which is almost equally divided among undergraduate and postgraduate students. The students are provided accommodation in 8 boys' hostels, 1 girls' hostel and 5 family hostels for married students. IIT Roorkee has exceptionally good facilities of indoor and outdoor sports which include among others, Rowing (in Ganga Canal), Swimming Pool, Squash and Billiards.

The Roorkee campus, spread over 365 acres, is rich in lush green ambience marked by tranquility and serenity. The Institute has a satellite campus at Saharanpur, 50 Kms from Roorkee, where teaching and research in Pulp & Paper technology is held. Another satellite campus is being developed at Greater Noida.

The Institute has 18 academic departments, 1 academic centre and 7 other centres and units. It provides Internet connectivity through campus-wide optical fibre network to all faculty and administrative offices, laboratories, students' hostels, guest house etc. A 4 Mbps link from BSNL and a 512 Kbps SCPC VSAT link from ERNET serves the Institute.

IIT Roorkee is the only institute in the country to offer programmes of study in the fields of Earthquake Engineering, Water Resources Engineering and Management, Hydrology, Welding Engineering, Alternate Hydro Energy and Pulp & Paper Technology. Major experimental research facilities available at IIT Roorkee include the following:

- *National Facility on Geochronology and Isotope Geology*
- *Variable Pressure Scanning Electron Microscope*
- *Strong Motion Instrumentation Network*
- *Shake Table and Shock Table for Earthquake Ground Motion Simulation*
- *Welding Research Laboratory*
- *Large Boundary Layer Wind Tunnel*

IIT Roorkee lays strong emphasis on sponsored research and industrial consultancy. In the year 2002-2003, the total outlay of sponsored research was **Rs. 13 Crores** while for industrial consultancy it was **Rs. 9 Crores.** IITR is assisting the **state of Uttaranchal** in infrastructural development, IT initiatives, disaster management and small hydro electric power development and the **Govt of Delhi** in modernising its road infrastructure.

The final year UG and PG students are offered ample opportunities for job placement through campus placement programme. In the year 2002-2003, 70% UG and 33% PG students were offered jobs through this programme.

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**Further Enquiries** : Registrar, Indian Institute of Technology, Roorkee 247667, India. Fax: 01332-273560, Website : www.iitr.ac.in

Posted at NDPSO on Tuesday/Wednesday every wee

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# Centre for Distance Education
# UNIVERSITY OF HYDERABAD

**(A Central University established by an Act of Parliament)**
**Hyderabad – 500 046**

*'University with Potential for Excellence'*

## ADMISSION NOTIFICATION - 2004

Applications are invited from eligible candidates for admission to the following **Post Graduate Diploma Programmes of One year** duration to be offered **through Distance Education Mode** from **January 2004.**

1. **Computer Science (PGDCS)**
2. **Planning and Project Management (PGDPM)**
3. **Environmental Education and Management (PGDEM)**
4. **Human Rights (PGDHR)**
5. **Translation Studies in Hindi (PGDTSH)**
6. **Television Production (PGDTVP)**
7. **Library Automation and Networking (PGDLAN)**
8. **Telecommunications (PGDTC)**
9. **Chemical Analysis and Quality Management (PGDCAQM)**
10. **Business Ethics (PGDBE)**
11. **Cyber Laws and Intellectual Property Rights (PGDCL & IPR)**
12. **Environmental Economics (PGDEE)**
13. **Communicative English (PGDCE)**
14. **Mass Communication and Translation Techniques in Urdu (PGDMCTU)**

Graduates from any recognized Indian University are eligible for the above Programmes except for **PGDLAN** for which Bachelor's degree in Library Science is required. While for **PGDTC** Programme, study of Mathematics and Physics or Electronics at graduation level is necessary, for **PGDCAQM** programme, Chemistry as one of the subjects is required. Admission will be based on **Merit** and there will be **No Entrance Test**. Reservation exists in respect of candidates belonging to SC/ST/PH categories. Other details like programme fee, study schedule, contact classes, course delivery schedule etc., can be found in the Prospectus

**Sale of application forms to begin from : 12.11.2003**
**Last date for submission of filled-in applications : 24.12.2003**

**Prospectus-cum-Application Form at a cost of Rs. 200/-** can be had from the following Post Offices in AndhraPradesh. **Mancherial, Anantapur, Tirupathi, Cuddapah, Amalapuram, Kakinada, Rajahmundry, Arundalpet (Guntur), Narasaraopet, Tenali, Hyderabad GPO, Secunderabad HPO, Khairatabad HPO (Hyd.) Central University PO (Hyd), Karimnagar, Khammam, Bakinghampet(Vijayawada-2), Masulipatnam, Kurnool, Gadwal, Mahaboobnagar, Medak, Sangareddy, Siddipet., Bhongiri Nalgonda, Kavali, Nellore, Nizamabad, Chirala, Ongole, Srikakulam, Waltair R.S. Bobbili, Vizianagaram, Hanamkonda, Warangal, Eluru, Bhimavaram, Tanuku, Suryapet.**

Requests for **supply of applications** by **post** should be **addressed to the Section Officer (DE), University of Hyderabad, Central University P.O., Hyderabad -500 046** accompanied by a **crossed demand draft for Rs. 200/- drawn in favour of the Finance Officer, University of Hyderabad, on State Bank of India, HU Campus Branch (Code No. 5916) Hyderabad – 46 OR on Andhra Bank, Nampally Branch (Code No. 378) Hyderabad or any Scheduled Bank payable at Hyderabad.**

Applications completed in all respects accompanied by copies of relevant certificates, marks memos etc., can be **submitted at the above post offices** or posted to the **Section Officer (DE)** at the above address so as to reach him **on or before** the last date ie., **24.12.2003.**

Hyderabad
Date: **10.11.2003**

**P. MURALI KRISHNA**
**Officer on Special Duty**

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